

SEQUENCE LISTING

<110> Allen, Steve  
Hitz, Bill  
Kinney, Tony  
Tingey, Scott

<111> Plant Sugar Transport Proteins

<112> EE-1163

<113>

<114>

<115> 60'083,044  
<116> April 24, 1998

<117> 30

<118> Microsoft Office 97

<210> 1  
<211> 2824  
<212> DNA  
<213> Sea mays

<220>

<221> unsure  
<222> (29)

<220>

<221> unsure  
<222> (622)

<220>

<221> unsure  
<222> (626)

<220>

<221> unsure  
<222> (638)

<220>

<221> unsure  
<222> (669)

<220>

<221> unsure  
<222> (771)

<220>

<221> unsure  
<222> (822)

<220>

<221> unsure  
<222> (856)

<220>

<221> unsure  
<222> (889)

<220>

<221> unsure  
<222> (896)

<220>  
 <221> unsure  
 <222> (944)

<410> 1

ccccccccc	tccactccac	tacccacggng	gcacggcctg	cctctgcagc	tctgcccctgc	60
ccccccccc	tcgctctcca	accccaacgc	gcgcgcttgc	taaaattcac	ctcagcgcggt	120
actccagttt	ggccacctca	ccaccggcgg	ccgctgttta	agaaggcccc	gcgcccgcgtc	180
ggggtacacg	aaccttggcc	ggcggtggcg	gagtgggggc	gtagattttcc	ggcgggccatg	240
ggggggggcg	tgatgggtgc	cacggcgggc	tctatcgcca	acttgctgca	gggctgggac	300
aattggacaa	ttgctggagc	cgctctgtac	ataaagaagg	aattcaacct	gcagagcgag	360
cctctgctcg	aaggccctcat	cgtcgcccatg	ttcctcattg	gggcaacagt	catacaacaa	420
ttccgggggc	caagggttga	ctgggttgggt	aggaggccca	tgctgggtgc	ctcggtgtgtc	480
ctctactctg	tcagtgggtt	gggtgatgctt	tggggcgcaa	ttgtgtacat	cttgcctctc	540
gcaaggctca	ttgatgggtt	cgggtatcggt	ttgggggtca	cacttggttc	tctctacatc	600
tcgcaaaactg	caccgcacag	anattcttgg	ggctgntnga	acaogttgcc	gcagttcatt	660
gggttcagng	gagggtatgt	cctctctctac	tgcatgggtg	ttgggatgtc	cctcatgccc	720
aaacctgatt	ggaggctcat	gcttgaggtt	ctgtcgatcc	cgtcaacttat	ntacttttga	780
ctgactgtct	tctacttggc	tgaatcacca	aggtggcttg	tnagcaaaag	aaggatggcg	840
gaggggaaga	gagtgnctga	aaggctggcg	ggaagagaag	atgtctcang	ggaganggct	900
ctctctagttg	aaggtttggg	ggctcggtaaa	gatacacgta	tttnagagta	catacttggg	960
cctggccaccg	aggcagccga	tgatcttgtg	actgacggtg	ataaggaaca	aatcacactt	1020
tctgggcctg	aagaaggcca	gtcatggatt	gctcgacott	ctaagggaac	catactgctt	1080
ggaagtgtgc	ttctctcttgc	atctctgtcat	gggagcatgg	tgaaccagag	tgtacccctt	1140
atggatccga	ttgtgacact	ttttggtagt	gtcatgaga	atatgcctca	agctggagga	1200
entatgagga	gcacattgtt	tccaaaactt	ggaagtatgt	tcagtgtcac	agatcagcat	1260
gcacaaaactg	agcagtggga	tgaagagaat	cttcataggg	atgaagagga	gtacgcctct	1320
aatgggttag	gaggtgacta	tgaggacaat	ctccatagcc	cattgtgtgc	caggccaggca	1380
acaggttgccg	aagggaagga	cattgtgcac	catggctcac	gtggaaagtgc	tttgagcatg	1440
ggaaggccaaa	gcctctttagg	ggagggttga	gatgggtgtga	gcagcactga	tatcggttggg	1500
ggatggcagc	ttgcttggaa	atggctcagag	aaggaaaggtg	agaatggtag	aaaggaaaggt	1560
ggttccaaaa	gagtctactt	gcaccaaagag	ggagtctctg	gctcaagaag	gggtccaatt	1620
ggttccacttc	cgggtgggtgg	cgatgtctct	gagggtagtg	agtttgtaca	tgctgctgct	1680
ttagtaagtc	agtcagcact	tttctcaaaag	ggtcttgcctg	aaccacgcac	gtcagatgct	1740
gcctatgggtc	acccatctga	ggtagctgcc	aaagggttcc	gttggaagga	tttgttttga	1800
cctggagtga	ggcgtgcctt	gttagtcggt	gttggaattc	agatccttca	acagttttgct	1860
ggaataaaag	gtgttctgtg	ctatacccca	caaattcttg	agcaagctgg	tgtggcagtt	1920
attcttttcca	aattttggtct	cagctcggca	ccagcatcca	tcttgatcag	ttctctcact	1980
accttactaa	tgttctcttg	cattggcttt	gccatgctgc	ttatggatct	ttccgggaaga	2040
aggttttttgc	tgtatggcac	aattccaatc	ttgatagcat	ctctagttat	cctgggttgtg	2100
tccaatctaa	ttgatttggg	tacactagcc	catgcttttg	tctccacccat	cagtgttata	2160
gtctactctct	gctgcttctg	tatgggattt	ggtcccatcc	ccaacatttt	atgtgcagag	2220
atcttttccaa	ccagggttcg	tggcctctgt	attgpcattt	gtgcttttac	attctggatc	2280
cgagatatca	tcgtcaccta	cagccttctt	gtgatgctga	atgctatttg	actggcgggt	2340
ggttttcagca	tatatgcagt	cgtatgcttg	atttctcttg	tgttcgtctt	ccttaagggtc	2400
cctgagacaa	aggggatgcc	ccttgagggt	attaccgaat	tctttgcagt	tgggtgcgaag	2460
caagcggtcg	caaaagccta	atttcttttg	tacctttgtg	tgcaactatt	gcactgtaag	2520
ttagaaaactt	gaagggtttt	caccaagaag	ctcggagaat	tactttggat	ttgtgtaaatt	2580
gtraaggga	cgaacatctg	ctcatgctcc	tcaaacggta	aaaaagagtc	cctcaatggc	2640
aatagggagt	cgttaagttg	tcaatgtcat	ttaccatatg	ttttacctat	ttgtactgta	2700
ttataagtca	agctattcaa	cgtctggttg	tgctagaaat	ctttagaaca	aagatgataa	2760
tgatctgctc	tgatgttata	atattcaaat	ctcaaataaa	gaaaatatcg	tttctcaaaa	2820
aaaa						2824

<210> 2  
 <211> 747  
 <212> PRT  
 <213> 2ea may

<220>  
 <221> UNSUFE  
 <222> (129)

<220>  
 <221> UNSUFE  
 <222> (133)..(134)

\*0220\*  
\*0221\* UNSURE  
\*0222\* (144)

\*0223\*  
\*0224\* UNSURE  
\*0225\* (178)

\*0226\*  
\*0227\* UNSURE  
\*0228\* (207)

\*0229\*  
\*0230\* UNSURE  
\*0231\* (218)

\*0232\*  
\*0233\* UNSURE  
\*0234\* (220)

\*0235\*  
\*0236\* UNSURE  
\*0237\* (236)

\*4000\* 2

Met Gly Gly Ala Val Met Val Ala Ile Ala Ala Ser Ile Gly Asn Leu  
1 5 10 15

Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile  
20 25 30

Lys Lys Glu Phe Asn Leu Gln Ser Glu Pro Leu Ile Glu Gly Leu Ile  
35 40 45

Val Ala Met Phe Leu Ile Gly Ala Thr Val Ile Thr Thr Ser Pro Gly  
50 55 60

Pro Arg Ala Asp Cys Val Gly Arg Arg Pro Met Leu Val Ala Ser Ala  
65 70 75 80

Val Leu Tyr Phe Val Ser Gly Leu Val Met Leu Trp Ala Pro Ile Val  
85 90 95

Tyr Ile Leu Leu Leu Ala Arg Leu Ile Asp Gly Phe Gly Ile Gly Leu  
100 105 110

Ala Val Thr Leu Val Pro Leu Tyr Ile Ser Glu Thr Ala Pro His Arg  
115 120 125

Xaa Ser Trp Gly Xaa Xaa Asn Thr Leu Pro Gln Phe Ile Gly Val Xaa  
130 135 140

Gly Gly Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met  
145 150 155 160

Pro Lys Pro Asp Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser  
165 170 175

Leu Xaa Tyr Phe Gly Leu Thr Val Phe Tyr Leu Pro Glu Ser Pro Arg  
180 185 190

Trp Leu Val Ser Lys Gly Arg Met Ala Glu Ala Lys Arg Val Xaa Gln  
195 200 205

Arg Leu Arg Gly Arg Glu Asp Val Ser Xaa Glu Xaa Ala Leu Leu Val  
 210 215 220  
 Glu Gly Leu Gly Val Gly Lys Asp Thr Arg Ile Xaa Glu Tyr Ile Ile  
 225 230 235 240  
 Gly Pro Ala Thr Glu Ala Ala Asp Asp Leu Val Thr Asp Gly Asp Lys  
 245 250 255  
 Glu Gln Ile Thr Leu Tyr Gly Pro Glu Glu Gly Gln Ser Trp Ile Ala  
 260 265 270  
 Arg Pro Ser Lys Gly Pro Ile Met Leu Gly Ser Val Leu Ser Leu Ala  
 275 280 285  
 Ser Arg His Gly Ser Met Val Asn Gln Ser Val Pro Leu Met Asp Pro  
 290 295 300  
 Ile Val Thr Leu Phe Gly Ser Val His Glu Asn Met Pro Gln Ala Gly  
 305 310 315 320  
 Gly Ser Met Arg Ser Thr Leu Phe Pro Asn Phe Gly Ser Met Phe Ser  
 325 330 335  
 Val Thr Asp Gln His Ala Lys Asn Glu Gln Trp Asp Glu Glu Asn Leu  
 340 345 350  
 His Arg Asp Asp Glu Glu Tyr Ala Ser Asp Gly Ala Gly Gly Asp Tyr  
 355 360 365  
 Glu Asp Asn Leu His Ser Pro Leu Leu Ser Arg Gln Ala Thr Gly Ala  
 370 375 380  
 Glu Gly Lys Asp Ile Val His His Gly His Arg Gly Ser Ala Leu Ser  
 385 390 395 400  
 Met Arg Arg Gln Ser Leu Leu Gly Glu Gly Gly Asp Gly Val Ser Ser  
 405 410 415  
 Thr Asp Ile Gly Gly Gly Trp Gln Leu Ala Trp Lys Trp Ser Glu Lys  
 420 425 430  
 Glu Gly Glu Asn Gly Arg Lys Glu Gly Gly Phe Lys Arg Val Tyr Leu  
 435 440 445  
 His Gln Glu Gly Val Pro Gly Ser Arg Arg Gly Ser Ile Val Ser Leu  
 450 455 460  
 Pro Gly Gly Gly Asp Val Leu Glu Gly Ser Glu Phe Val His Ala Ala  
 465 470 475 480  
 Ala Leu Val Ser Gln Ser Ala Leu Phe Ser Lys Gly Leu Ala Glu Pro  
 485 490 495  
 Arg Met Ser Asp Ala Ala Met Val His Pro Ser Glu Val Ala Ala Lys  
 500 505 510  
 Gly Ser Arg Trp Lys Asp Leu Phe Glu Pro Gly Val Arg Arg Ala Leu  
 515 520 525  
 Leu Val Gly Val Gly Ile Gln Ile Leu Gln Gln Phe Ala Gly Ile Asn  
 530 535 540  
 Gly Val Leu Tyr Tyr Thr Pro Gln Ile Leu Glu Gln Ala Gly Val Ala  
 545 550 555 560

Val	Ile	Leu	Ser	Lys	Phe	Gly	Leu	Ser	Ser	Ala	Ser	Ala	Ser	Ile	Leu	565	570	575	
Ile	Ser	Ser	Leu	Thr	Thr	Leu	Leu	Met	Leu	Pro	Cys	Ile	Gly	Phe	Ala	580	585	590	
Met	Leu	Leu	Met	Asp	Leu	Ser	Gly	Arg	Arg	Phe	Leu	Leu	Leu	Gly	Thr	595	600	605	
Ile	Pro	Ile	Leu	Ile	Ala	Ser	Leu	Val	Ile	Leu	Val	Val	Ser	Asn	Leu	610	615	620	
Ile	Asp	Leu	Gly	Thr	Leu	Ala	His	Ala	Leu	Leu	Ser	Thr	Ile	Ser	Val	625	630	635	640
Ile	Val	Tyr	Phe	Cys	Cys	Phe	Val	Met	Gly	Phe	Gly	Pro	Ile	Pro	Asn	645	650	655	
Ile	Leu	Cys	Ala	Glu	Ile	Phe	Pro	Thr	Arg	Val	Arg	Gly	Leu	Cys	Ile	660	665	670	
Ala	Ile	Cys	Ala	Phe	Thr	Phe	Trp	Ile	Gly	Asp	Ile	Ile	Val	Thr	Tyr	675	680	685	
Ser	Leu	Pro	Val	Met	Leu	Asn	Ala	Ile	Gly	Leu	Ala	Gly	Val	Phe	Ser	690	695	700	
Ile	Tyr	Ala	Val	Val	Cys	Leu	Ile	Ser	Phe	Val	Phe	Val	Phe	Leu	Lys	705	710	715	720
Val	Pro	Glu	Thr	Lys	Gly	Met	Pro	Leu	Glu	Val	Ile	Thr	Glu	Phe	Phe	725	730	735	
Ala	Val	Gly	Ala	Lys	Gln	Ala	Ala	Ala	Lys	Ala						740	745		

<210> 3  
 <211> 443  
 <212> DNA  
 <213> Oryza sativa

<220>  
 <221> unsure  
 <222> (193)

<220>  
 <221> unsure  
 <222> (388)

<220>  
 <221> unsure  
 <222> (435)

<220>  
 <221> unsure  
 <222> (439)

<400>	3																
gaagagctca	cccccccccc	ctgggccctg	gactccctcc	tccaaatctc	ccctaaaagc												60
ttcccaattt	ggcgagaatt	ccccatata	ttgcccacac	tgggggtccc	aacgagccct												120
tccagattcc	cagccgcctc	tcttcttggt	aggggatccg	aatctcgggt	ggacgagaga												180
cttggtggta	atnatcgcc	ggccatggcg	ggcgccgtgc	tggtcgccat	cgcggcctcc												240
atcggaact	tgctgcaggg	ctgggataat	gcaaccattg	caggtgcgggt	actgtacatc												300
aagaaggaat	tcaacttgca	tagcgacccc	cttatcgaag	gtctgatcgt	ggccatgtcg												360
ctcattgggg	ccaccatcat	cacgacgntc	tctgcgagca	ggtggctgac	tcttttggtg												420
tgggggccca	tgctnatcnc	ttc															443

<210> 4  
 <211> 131  
 <212> PRT  
 <213> Oryza sativa

<220>  
 <221> UNSURE  
 <222> (65)

<220>  
 <221> UNSURE  
 <222> (130)

<400> 4  
 Glu Glu Leu Thr Pro Pro Pro Ser Ala Leu Asp Ser Leu Leu Gln Ile  
 1 5 10 15  
 Ser Pro Lys Ser Phe Pro Ile Trp Arg Glu Phe Pro Ile Tyr Leu Pro  
 20 25 30  
 His Leu Gly Val Pro Thr Ser Pro Ser Arg Phe Pro Ala Ala Ser Leu  
 35 40 45  
 Leu Val Arg Gly Ser Glu Ile Ser Val Asp Glu Arg Leu Gly Gly Asn  
 50 55 60  
 Asa Ser Pro Ala Met Ala Gly Ala Val Leu Val Ala Ile Ala Ala Ser  
 65 70 75 80  
 Ile Gly Asn Leu Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala  
 85 90 95  
 Val Leu Tyr Ile Lys Lys Glu Phe Asn Leu His Ser Asp Pro Leu Ile  
 100 105 110  
 Glu Gly Leu Ile Val Ala Met Ser Leu Ile Gly Ala Thr Ile Ile Thr  
 115 120 125  
 Thr Asa Ser  
 130

<210> 5  
 <211> 870  
 <212> DNA  
 <213> Oryza sativa

<400> 5  
 gcaacgaggtt ctaacottga ttctgggtcaa tattctggat gtggggacca tggttcatgc 60  
 ctcactgtcc acagtcagtg tcatactcta cttctgcttc ttgtcatgg ggttcggggcc 120  
 tattccaaac attctctgtg cagagatttt cccgaccacc gttcgtggca tctgcatagc 180  
 catctgtgac ctaacattct ggatcgggtga tatcattgtg acatacacc tccccgtgat 240  
 gtcacaagcc attggactcg ctggagtggt tggaaatctac gcagtgggtct gcatactggc 300  
 tctctgtgtt gtcttcatga aggtgccgga gacaaagggc atgctctctg aagtcatcac 360  
 cgagttcttc tctgtcggag caaagcaggc caaggaggac tagttgctcg gatcaagtga 420  
 tcaatcagat tgctgggtgt aattttgttg cttccaaatc gcgctgcggg ttaaacctgt 480  
 gatggatgct ttgttaaaga atcttggaag agatcaaaat gcagtgagcc taaagagatg 540  
 atttggctgt acatcatgag gctgaatcct gtcgtagact ggattttgga gcttaggata 600  
 tgtagatcat ctgttctctt tgggttggtc attttccatt tgtgtttctt tggaattctt 660  
 ctccctgtaa ctagtggtct atcacagttg tggtactggt tttgccttac tcttgagttt 720  
 gttttcttct ctcggttgtg agttctgaat attagcatag ccgagtacta gttctgaatt 780  
 ggtttctctc ctgctgaaca tctttcattg atgcttggat ttcattcaaaa aaaaaaaaaa 840  
 aaaactcgag ggggagcccg gtacacatct 870

<210> 6  
 <211> 131

<212> FRT  
 <213> Cryza sativa

<400> 6  
 Val Leu Thr Leu Ile Leu Val Asn Ile Leu Asp Val Gly Thr Met Val  
 1 5 10 15  
 His Ala Ser Leu Ser Thr Val Ser Val Ile Leu Tyr Phe Cys Phe Phe  
 20 25 30  
 Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe  
 35 40 45  
 Pro Thr Thr Val Arg Gly Ile Cys Ile Ala Ile Cys Ala Leu Thr Phe  
 50 55 60  
 Trp Ile Gly Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn  
 65 70 75 80  
 Ala Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Val Val Cys Ile  
 85 90 95  
 Leu Ala Phe Leu Phe Val Phe Met Lys Val Pro Glu Thr Lys Gly Met  
 100 105 110  
 Pro Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala Lys Gln Ala  
 115 120 125  
 Lys Glu Asp  
 130

<210> 7  
 <211> 2601  
 <212> DNA  
 <213> Glycine max

<400> 7  
 gttgcttaac ccttggttgag tgaagtgagc aaggggaatg gggatctgaa attcggatac 60  
 tttaattgct tctcgctttc accgaccgaa ctcaatttat agatactcgg tcaacctcaa 120  
 tccaaactaa cttagcagttc cttgctgctg ctcccttctc accatatacg agtaatgaaa 180  
 ggtgcccgtcc ttggttgetat tggcgcttcc attggtaatt tcttccaagg atgggataat 240  
 gctaccatcg ccgggggctaa tgggttacatt aagaaagacc ttgctttggg aacaactatg 300  
 gaaaggcttg tgggtgggcat gtccttgatt ggagcaacgg taatcaccac atgctctggg 360  
 cctatagcgg attggctcgg tggcgacccc atgatgataa tctcatctgt gctctatttc 420  
 ttgggtgggt ttggtgatgct gtgggtccca aatgtgtatg ttgtgtgctt ggcgaggcta 480  
 cttgatggat ttgggattgg ccttgctgtg actcttgctc cggctctatat atctgaaacg 540  
 gggccgtctg aaataagggg gtcgttgaat acgcttcctc agttcagtggt ctctggagga 600  
 atgtttttgt cgtactgtat ggtttttggc atgtcattga gtcccgcgcc tagctggagg 660  
 ctcattgctg ggtttctgtc tattccttct ctcttgattt ttgcattgac catttttttc 720  
 ttgcccagat ctctcgggtg gctgggtcagc aaagggaagg tgcctcagggc taagaagggtg 780  
 ccccaaagat tggcggaag ggaggatgtg tcaggcgaga ttggcattgct ggttgaagggt 840  
 ctggggattg ggggtgatac atctatcgaa gaggacataa ttggccctgc tgacgatgtg 900  
 gctgatggtc atgaacatgc aacagagaaa gataaaaattc gatttatatg atcccaagca 960  
 ggcctttctt gggttatcaaa acctgtcact ggacagagtt ctattggcct tgcgtcacac 1020  
 catggaagca tcatcaacca aagcatgccc ctcatggatc ctctgggtgac actgtttggt 1080  
 agcattcatg agaagctccc cgagacagga gcaagaggaa gcatgcgaag cactctgttt 1140  
 ccaaattttg gaagcatggt cagcactgct gagccgcatg ctaaaattga acaatgggat 1200  
 gaagaaagct tacaaaggga acgtgaggac tacatgtcag atgcaacccg tggggactcc 1260  
 gatgataatt tgcacagtc tttaatctca cgccaaacaa caagccttga aaaagactta 1320  
 cctcctctc cttcccatgg cagtatcctt ggcagcatga ggcgtcacag tagtctcatg 1380  
 caagggtcag gtgagcaagg tggtagtaca ggtattggtg gtggctggca actggcatgg 1440  
 aaatggactg ataaagggtg ggtatgaaaa caacaaggag ggtttaaaag gatttattta 1500  
 catgaggagg gagtttctgc atctcgtcgt ggatccattg tatcgattcc cgggtgaaggc 1560  
 gaatttgctc aggctgctgc cttggttaagc caaccgcctc ttaactccaa ggagcttatt 1620  
 gatggacacc cagttgggccc tgcaatgggt caccatctg agacagcttc aaaggggcca 1680  
 agttggaaag ctcttcttga accagggggt aagcatgcat tgggtgttgg agttggaata 1740



```

aaaataacttc agcagtttttc agggataaat ggggtttctat attacacacc tcaaatccct 1800
gaagaggccg gtgttgaagt tcttctttca gatataggca ttggctcaga gtgggcatca 1860
tcccttatca gtgctttcac aaccttcttg atgcttccct gtataggcgt agccatgaag 1920
ctcatggatg tttcaggcag aaggcagttg ctacttacta caatccccgt gctgattgtg 1980
tcactcatta ttttggtcac tgggaagcctg gtaaattttg gcaatgtcgc ccattgcagca 2040
atctcaacag tatgggttgt ggtttatttc tgcctgtttg tgatgggtta tggaccaatt 2100
ccaaacatcc tttgctcaga gattttcccc actagggtgc gtggcctctg cattgctatc 2160
tgtgcattag tgttctggat tggagacatc atcatcacat actcgtgcgc tgtgatgctc 2220
ggctctttag gacttgggtg tgtattcgcc atttacgcag ttgtttgttt catctcgtgg 2280
atatttctgt ttttgaaggt tccagaaaca aagggcctgc ccttgaagt catctctgaa 2340
tctttttctg ttggagcaca gcaggctgct tctgccaaga atgagtgaac caacacaagt 2400
ccgttatata ctctgtaact ttagttgtta aagccatcat ctctcgtctt tacagatttt 2460
gcttttcata agtttatttg gaggaagata ttttgaaaaca tatgggtttt tttttctttc 2520
ataaaaaataa aacccctccc tttttgggtg gggaaaagaa aaaaaaaaaa aaaaaaaaaa 2580
aaaaaaaaaa aaaaaaaaaa a 2601

```

42100 8  
 42110 737  
 42120 PRT  
 42130 Glycine max

44000 8  
 Met Lys Gly Ala Val Leu Val Ala Ile Ala Ala Ser Ile Gly Asn Phe  
   1                  5                  10                  15  
  
 Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Asn Gly Tyr Ile  
                   20                  25                  30  
  
 Lys Lys Asp Leu Ala Leu Gly Thr Thr Met Glu Arg Leu Val Val Gly  
           35                  40                  45  
  
 Met Ser Leu Ile Gly Ala Thr Val Ile Thr Thr Cys Ser Gly Pro Ile  
   50                  55                  60  
  
 Ala Asp Trp Leu Gly Arg Arg Pro Met Met Ile Ile Ser Ser Val Leu  
   65                  70                  75                  80  
  
 Tyr Phe Leu Gly Gly Leu Val Met Leu Trp Ser Pro Asn Val Tyr Val  
                   85                  90                  95  
  
 Leu Cys Leu Ala Arg Leu Leu Asp Gly Phe Gly Ile Gly Leu Ala Val  
           100                  105                  110  
  
 Thr Leu Val Pro Val Tyr Ile Ser Glu Thr Ala Pro Ser Glu Ile Arg  
   115                  120                  125  
  
 Gly Ser Leu Asn Thr Leu Pro Gln Phe Ser Gly Ser Gly Gly Met Phe  
   130                  135                  140  
  
 Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Ser Pro Ala Pro Ser  
   145                  150                  155                  160  
  
 Trp Arg Leu Met Leu Gly Val Leu Ser Ile Pro Ser Leu Leu Tyr Phe  
           165                  170                  175  
  
 Ala Leu Thr Ile Phe Phe Leu Pro Glu Ser Pro Arg Trp Leu Val Ser  
           180                  185                  190  
  
 Lys Gly Arg Met Leu Glu Ala Lys Lys Val Leu Gln Arg Leu Arg Gly  
   195                  200                  205  
  
 Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly Leu Gly  
   210                  215                  220  
  
 Ile Gly Gly Asp Thr Ser Ile Glu Glu Tyr Ile Ile Gly Pro Ala Asp  
   225                  230                  235                  240



Asp	Val	Ala	Asp	Gly	His	Glu	His	Ala	Thr	Glu	Lys	Asp	Lys	Ile	Arg	245	250	255	
Leu	Tyr	Gly	Ser	Gln	Ala	Gly	Leu	Ser	Trp	Leu	Ser	Lys	Pro	Val	Thr	260	265	270	
Gly	Gln	Ser	Ser	Ile	Gly	Leu	Ala	Ser	His	His	Gly	Ser	Ile	Ile	Asn	275	280	285	
Gln	Ser	Met	Pro	Leu	Met	Asp	Pro	Leu	Val	Thr	Leu	Phe	Gly	Ser	Ile	290	295	300	
His	Glu	Lys	Leu	Pro	Glu	Thr	Gly	Ala	Arg	Gly	Ser	Met	Arg	Ser	Thr	305	310	315	320
Leu	Phe	Pro	Asn	Phe	Gly	Ser	Met	Phe	Ser	Thr	Ala	Glu	Pro	His	Ala	325	330	335	
Lys	Ile	Glu	Gln	Trp	Asp	Glu	Glu	Ser	Leu	Gln	Arg	Glu	Arg	Glu	Asp	340	345	350	
Tyr	Met	Ser	Asp	Ala	Thr	Arg	Gly	Asp	Ser	Asp	Asp	Asn	Leu	His	Ser	355	360	365	
Pro	Leu	Ile	Ser	Arg	Gln	Thr	Thr	Ser	Leu	Glu	Lys	Asp	Leu	Pro	Pro	370	375	380	
Pro	Pro	Ser	His	Gly	Ser	Ile	Leu	Gly	Ser	Met	Arg	Arg	His	Ser	Ser	385	390	395	400
Leu	Met	Gln	Gly	Ser	Gly	Glu	Gln	Gly	Gly	Ser	Thr	Gly	Ile	Gly	Gly	405	410	415	
Gly	Trp	Gln	Leu	Ala	Trp	Lys	Trp	Thr	Asp	Lys	Gly	Glu	Asp	Gly	Lys	420	425	430	
Gln	Gln	Gly	Gly	Phe	Lys	Arg	Ile	Tyr	Leu	His	Glu	Glu	Gly	Val	Ser	435	440	445	
Ala	Ser	Arg	Arg	Gly	Ser	Ile	Val	Ser	Ile	Pro	Gly	Glu	Gly	Glu	Phe	450	455	460	
Val	Gln	Ala	Ala	Ala	Leu	Val	Ser	Gln	Pro	Ala	Leu	Tyr	Ser	Lys	Glu	465	470	475	480
Leu	Ile	Asp	Gly	His	Pro	Val	Gly	Pro	Ala	Met	Val	His	Pro	Ser	Glu	485	490	495	
Thr	Ala	Ser	Lys	Gly	Pro	Ser	Trp	Lys	Ala	Leu	Leu	Glu	Pro	Gly	Val	500	505	510	
Lys	His	Ala	Leu	Val	Val	Gly	Val	Gly	Ile	Gln	Ile	Leu	Gln	Gln	Phe	515	520	525	
Ser	Gly	Ile	Asn	Gly	Val	Leu	Tyr	Tyr	Thr	Pro	Gln	Ile	Leu	Glu	Glu	530	535	540	
Ala	Gly	Val	Glu	Val	Leu	Leu	Ser	Asp	Ile	Gly	Ile	Gly	Ser	Glu	Ser	545	550	555	560
Ala	Ser	Phe	Leu	Ile	Ser	Ala	Phe	Thr	Thr	Phe	Leu	Met	Leu	Pro	Cys	565	570	575	
Ile	Gly	Val	Ala	Met	Lys	Leu	Met	Asp	Val	Ser	Gly	Arg	Arg	Gln	Leu	580	585	590	

Leu Leu Thr Thr Ile Pro Val Leu Ile Val Ser Leu Ile Ile Leu Val  
 595 600 605  
 Ile Gly Ser Leu Val Asn Phe Gly Asn Val Ala His Ala Ala Ile Ser  
 610 615 620  
 Thr Val Cys Val Val Val Tyr Phe Cys Cys Phe Val Met Gly Tyr Gly  
 625 630 635 640  
 Pro Ile Pro Asn Ile Leu Cys Ser Glu Ile Phe Pro Thr Arg Val Arg  
 645 650 655  
 Gly Leu Cys Ile Ala Ile Cys Ala Leu Val Phe Trp Ile Gly Asp Ile  
 660 665 670  
 Ile Ile Thr Tyr Ser Leu Pro Val Met Leu Gly Ser Leu Gly Leu Gly  
 675 680 685  
 Gly Val Phe Ala Ile Tyr Ala Val Val Cys Phe Ile Ser Trp Ile Phe  
 690 695 700  
 Val Phe Leu Lys Val Pro Glu Thr Lys Gly Met Pro Leu Glu Val Ile  
 705 710 715 720  
 Ser Glu Phe Phe Ser Val Gly Ala Lys Glu Ala Ala Ser Ala Lys Asn  
 725 730 735  
 Glu

#110 9  
 #111 1692  
 #112 DNA  
 #113 Glycine max

#4000 9  
 gcaagaggga tccgtccaga gaaaaagatc aaattaagtt gtatggacca gaacaaggcc 60  
 agtccctgggt tgctagacct gttgctggac caaattctgt tggccttgta tctaggaaag 120  
 gaagcatggc aaatccaagc agtctagtgg acctctagt gacctcttt ggtagtgtac 180  
 atgagaagct cccagaaaca ggaagcacc tttttccaca ctttgggagt atgttcagtg 240  
 ttgggggaaa tcagccaagg aatgaagatt gggatgagga aagcctagcc agagaggggtg 300  
 atgattatgt ctctgatgct ggtgattctg atgacaattt gcagagtcca ttgatctcac 360  
 gtcaaacac gagtctggat aaggacatac ctctcatgc ccatagtaac cttgcaagca 420  
 tgaggcaagg tagtctttta catggaaatt caggagaacc cactggtagt actgggattg 480  
 gtggtggttg gcagctagca tggaaatggt ctgaaagaga gggcccagat ggaaagaagg 540  
 aaggtggctt caagagaata tatttacacc aagatgggtg ttctggatct agacgtgggt 600  
 ctgtggtttc actccctggc ggtgatttac caactgacag tgaggttgta caggctgctg 660  
 ctctgggtgag tcagcctgcc ctttataatg aggaccttat ggcgtcaacgg ccagttggac 720  
 cagctatgat tcatccctct gaaacaattg caaaagggcc aagttggagt gatctttttg 780  
 aacctgggggt gaagcatgca ttgattgtgg ggggtgggaat gcaaattctt cagcagttct 840  
 ctggtataaa tggggctcct tactatacgc ctcaaattct tgagcaggca ggtggttggt 900  
 atcttctttc aagcctagga cttggtttta cttcttcac cttctctatt agtgcggtga 960  
 caaccttggt gatgcttct tgtatagcca ttgccatgag gctcatggat atttcaggca 1020  
 gaaggacttt gctgctcagt acaatccccg tccataatagc agctcttctc atattagtcc 1080  
 tgggaagtct tgtggatttg ggatccactg caaatgcac aatctcaacc attagtgtta 1140  
 ttgtctattt ctgtttcttt gtcattgggt ttggaccaat tccataatata ctttgtgcag 1200  
 agatcttccc cactcgagtt cgtgggtctct gcattgctat ttgtgacctt accttttgga 1260  
 tctgtgatat cattgtcacc tacacaactc cagttatgct caattctgta ggcctcgctg 1320  
 gtgttttttg tatttatgct gtcgtgtgct tcatagcatg ggtgtttgtc tttttgaaag 1380  
 ttccagaaac caagggcatt ccactggaag tgcatttga gttctctct gtcggagcaa 1440  
 aacagtttga cgatgccaa gacaaactga ccaaggacat gataaattca aagttttgac 1500  
 ggtaccttct aattattttc aatctacggc tgtttgaaat tttccctct tttaaaattt 1560  
 tattttctat ttattctctc tttccgtgg gttgagattg agaaacaaga aactttgttt 1620  
 ctgtaaagaa aaatgttcat tttctggttc atttatggaa ctttatatac ttcctaaaaa 1680  
 aaaaaaaaaa aa 1692

42100 10  
 42110 486  
 42120 PPT  
 42130 Glycine max

44000 10  
 Asp Pro Ser Arg Glu Lys Asp Gln Ile Lys Leu Tyr Gly Pro Glu Gln  
 1 5 10 15  
 Gly Gln Ser Trp Val Ala Arg Pro Val Ala Gly Pro Asn Ser Val Gly  
 20 25 30  
 Leu Val Ser Arg Lys Gly Ser Met Ala Asn Pro Ser Ser Leu Val Asp  
 35 40 45  
 Pro Leu Val Thr Leu Phe Gly Ser Val His Glu Lys Leu Pro Glu Thr  
 50 55 60  
 Gly Ser Thr Leu Phe Pro His Phe Gly Ser Met Phe Ser Val Gly Gly  
 65 70 75 80  
 Asn Gln Pro Arg Asn Glu Asp Trp Asp Glu Glu Ser Leu Ala Arg Glu  
 85 90 95  
 Gly Asp Asp Tyr Val Ser Asp Ala Gly Asp Ser Asp Asp Asn Leu Gln  
 100 105 110  
 Ser Pro Leu Ile Ser Arg Gln Thr Thr Ser Leu Asp Lys Asp Ile Pro  
 115 120 125  
 Pro His Ala His Ser Asn Leu Ala Ser Met Arg Gln Gly Ser Leu Leu  
 130 135 140  
 His Gly Asn Ser Gly Glu Pro Thr Gly Ser Thr Gly Ile Gly Gly Gly  
 145 150 155 160  
 Trp Gln Leu Ala Trp Lys Trp Ser Glu Arg Glu Gly Pro Asp Gly Lys  
 165 170 175  
 Lys Glu Gly Gly Phe Lys Arg Ile Tyr Leu His Gln Asp Gly Gly Ser  
 180 185 190  
 Gly Ser Arg Arg Gly Ser Val Val Ser Leu Pro Gly Gly Asp Leu Pro  
 195 200 205  
 Thr Asp Ser Glu Val Val Gln Ala Ala Ala Leu Val Ser Gln Pro Ala  
 210 215 220  
 Leu Tyr Asn Glu Asp Leu Met Arg Gln Arg Pro Val Gly Pro Ala Met  
 225 230 235 240  
 Ile His Pro Ser Glu Thr Ile Ala Lys Gly Pro Ser Trp Ser Asp Leu  
 245 250 255  
 Phe Glu Pro Gly Val Lys His Ala Leu Ile Val Gly Val Gly Met Gln  
 260 265 270  
 Ile Leu Gln Gln Phe Ser Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro  
 275 280 285  
 Gln Ile Leu Glu Gln Ala Gly Val Gly Tyr Leu Leu Ser Ser Leu Gly  
 290 295 300  
 Leu Gly Ser Thr Ser Ser Ser Phe Leu Ile Ser Ala Val Thr Thr Leu  
 305 310 315 320

Leu Met Leu Pro Cys Ile Ala Ile Ala Met Arg Leu Met Asp Ile Ser  
 325 330 335  
 Gly Arg Arg Thr Leu Leu Leu Ser Thr Ile Pro Val Leu Ile Ala Ala  
 340 345 350  
 Leu Leu Ile Leu Val Leu Gly Ser Leu Val Asp Leu Gly Ser Thr Ala  
 355 360 365  
 Asn Ala Ser Ile Ser Thr Ile Ser Val Ile Val Tyr Phe Cys Phe Phe  
 370 375 380  
 Val Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe  
 385 390 395 400  
 Pro Thr Arg Val Arg Gly Leu Cys Ile Ala Ile Cys Ala Leu Thr Phe  
 405 410 415  
 Trp Ile Cys Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn  
 420 425 430  
 Ser Val Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Val Val Cys Phe  
 435 440 445  
 Ile Ala Trp Val Phe Val Phe Leu Lys Val Pro Glu Thr Lys Gly Met  
 450 455 460  
 Pro Leu Glu Val Ile Ile Glu Phe Phe Ser Val Gly Ala Lys Gln Phe  
 465 470 475 480  
 Asp Asp Ala Lys His Asn  
 485

<210> 11  
 <211> 510  
 <212> DNA  
 <213> Triticum aestivum

<220>  
 <221> unsure  
 <222> (421)

<220>  
 <221> unsure  
 <222> (434)

<220>  
 <221> unsure  
 <222> (441)

<220>  
 <221> unsure  
 <222> (458)

<220>  
 <221> unsure  
 <222> (483)

<220>  
 <221> unsure  
 <222> (493)

<220>  
 <221> unsure  
 <222> (498)

<400> 11  
 aggtggcagc cggggcagtg aaggaggggt agctcttgge tcctatttga ggogggcttcg 60  
 ctgggttctg atctaccgca ccacaccacc acaccacacc agggggcttg cgtttcttgg 120  
 gcttctccat ctcatctcct tgggttggttc tctactagag aggcgcagct gcagggatcc 180  
 ctgggtggaga ggagggaaga agatgtcggg tgcctgactg gtcgggattg cggcttccat 240  
 tggcaatctg ctgcaggggt gggacaatgc caccatcgtt ggtgtgttgc tgtacatcaa 300  
 gaaggaaattc cagctcgaaa ataattcgac tgtggagggg ctcatcgttg catgtcttca 360  
 tgggttgcaa catcatcaca cattctccgg gccagtatca aactgggttg ccggggcccta 420  
 agccatctcc ttgntttcaa ntcccaaggg ctaattcanct aggcaccaat gtcaatgtgc 480  
 gcnccgggaa ctntcaangg ttggaacggt 510

<210> 12  
 <211> 117  
 <212> FRT  
 <213> Triticum aestivum

<400> 12  
 Gly Gly Ser Arg Gly Ser Glu Gly Gly Val Ala Leu Gly Ser Tyr Leu  
 1 5 10 15  
 Arg Arg Leu Arg Ser Val Leu Ile Tyr Arg Thr Thr Pro Pro His His  
 20 25 30  
 Thr Arg Gly Leu Pro Leu Leu Gly Leu Leu His Leu Ile Ser Leu Val  
 35 40 45  
 Gly Ser Leu Leu Glu Arg Arg Ser Cys Arg Asp Pro Trp Trp Arg Gly  
 50 55 60  
 Gly Lys Lys Met Ser Gly Ala Ala Leu Val Ala Ile Ala Ala Ser Ile  
 65 70 75 80  
 Gly Asn Leu Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val  
 85 90 95  
 Leu Tyr Ile Lys Lys Glu Phe Gln Leu Glu Asn Asn Pro Thr Val Glu  
 100 105 110  
 Gly Leu Ile Val Ala  
 115

<210> 13  
 <211> 1487  
 <212> DNA  
 <213> Triticum aestivum

<400> 13  
 tctcttggaag agaggggtggg gaggcagtcg gcagcaactgg tattggtggg gggtggcaac 60  
 tggcatggaa atggtcggag cgacaaggcg aggatggcaa gaaggaaaga ggcttcaaaa 120  
 gaattctactt gcaccaagag ggggtggcgg actcaagaag gggctctgtt gtttcacttc 180  
 ctgggtggggg tgatgccacg caagggggga gtgggtttat acatgctgct gcttttggtaa 240  
 gccactcggc tctttaactcc aaggatctta tggagagagc tatggcgggc ggtccagcca 300  
 tgattcatcc attggaggga gctcccaaag gttcaatctg gaaagatctg tttgaacctg 360  
 gtgtgaggcg tgcattgttc gtccgtgttg gaattcagat gcttcagcag tttgctggaa 420  
 taaatggagt tctctactat actcctcaaa ttctggagca agctgggtgtg gctgttcttc 480  
 tttccaatct tggcctcagt tcagcatcag catccattct gatcagttct ctcaccacct 540  
 tactcatgct cccaagcatt ggtgtagcca tgagacttat ggatatactt ggaagaaggt 600  
 ttctgctact gggcacaatt cccatcttga tagcatccct aattgttttg ggtgtgggtca 660  
 atgttatcaa cttgagtagc gtgccccacg ctgtgctctc cacagttagc gtcattgtct 720  
 acttctgctg ctttgtcatg ggctttggcc cgatcccaaa cattctatgt gcagagattt 780  
 tccccaccag agtccgtggt gtctgcctcg ctatttgccg cctcacattc tggatttgtg 840  
 acattattgt tacctacagc ctgcctgtga tgcctgaatgc tattggtcta gcgggtgtct 900  
 ttggtatata tgcagtcgtt tgcctgattg cctttgtgtt cgtctacctt aaggtcccag 960  
 agacaaaggg catgcccttc gaggtcatca ccgagttctt tgcgggttggg gcgaagcaag 1020  
 cgcaggccac cattgcctga ttcattcatg agctttgttt tcagtttgca cactgcggtc 1080

tgcgctgaaa	attgcaaatt	ggacggggtcc	tccgtgaggaa	cggaaaaaact	tttgagttgt	1140
aaatgagaca	gtaccccaaa	gagctcatca	cgaggaacgg	gaagctgtaa	aagtaggagg	1200
atctcatgcc	cccatctcat	cgctctattat	tgcttattag	tactgtactg	taatcgctcat	1260
tagttgctgt	agggttggtc	aaattgctaa	tctgattctg	aactaccatg	ctgatgtccg	1320
aaataaagaa	aaagcatggt	tttttttggtg	tcaacttgca	aactttcttt	taaacattgt	1380
gcaatgtatt	gtaaatttct	ctatcaactt	ccctcgattc	agagagaagc	acttgtttgt	1440
aagtcatgaa	agatttttct	cgacaaaaaa	aaaaaaaaaa	aaaaaaa		1487

<210> 14  
 <211> 345  
 <212> PRT  
 <213> Triticum aestivum

Ser	Trp	Lys	Glu	Gly	Gly	Glu	Ala	Val	Ser	Ser	Thr	Gly	Ile	Gly	Gly	
1				5					10					15		
Gly	Trp	Gln	Leu	Ala	Trp	Lys	Trp	Ser	Glu	Arg	Gln	Gly	Glu	Asp	Gly	
			20					25					30			
Lys	Lys	Glu	Gly	Gly	Phe	Lys	Arg	Ile	Tyr	Leu	His	Gln	Glu	Gly	Val	
		35					40					45				
Ala	Asp	Ser	Arg	Arg	Gly	Ser	Val	Val	Ser	Leu	Pro	Gly	Gly	Gly	Asp	
	50					55					60					
Ala	Thr	Gln	Gly	Gly	Ser	Gly	Phe	Ile	His	Ala	Ala	Ala	Leu	Val	Ser	
65					70					75					80	
His	Ser	Ala	Leu	Tyr	Ser	Lys	Asp	Leu	Met	Glu	Glu	Arg	Met	Ala	Ala	
			85					90						95		
Gly	Pro	Ala	Met	Ile	His	Pro	Leu	Glu	Ala	Ala	Pro	Lys	Gly	Ser	Ile	
		100						105					110			
Trp	Lys	Asp	Leu	Phe	Glu	Pro	Gly	Val	Arg	Arg	Ala	Leu	Phe	Val	Gly	
		115					120					125				
Val	Gly	Ile	Gln	Met	Leu	Gln	Gln	Phe	Ala	Gly	Ile	Asn	Gly	Val	Leu	
	130					135					140					
Tyr	Tyr	Thr	Pro	Gln	Ile	Leu	Glu	Gln	Ala	Gly	Val	Ala	Val	Leu	Leu	
145					150					155					160	
Ser	Asn	Leu	Gly	Leu	Ser	Ser	Ala	Ser	Ala	Ser	Ile	Leu	Ile	Ser	Ser	
			165					170						175		
Leu	Thr	Thr	Leu	Leu	Met	Leu	Pro	Ser	Ile	Gly	Val	Ala	Met	Arg	Leu	
			180					185					190			
Met	Asp	Ile	Ser	Gly	Arg	Arg	Phe	Leu	Leu	Leu	Gly	Thr	Ile	Pro	Ile	
		195					200					205				
Leu	Ile	Ala	Ser	Leu	Ile	Val	Leu	Gly	Val	Val	Asn	Val	Ile	Asn	Leu	
	210					215					220					
Ser	Thr	Val	Pro	His	Ala	Val	Leu	Ser	Thr	Val	Ser	Val	Ile	Val	Tyr	
225					230					235					240	
Phe	Cys	Cys	Phe	Val	Met	Gly	Phe	Gly	Pro	Ile	Pro	Asn	Ile	Leu	Cys	
			245						250					255		
Ala	Glu	Ile	Phe	Pro	Thr	Arg	Val	Arg	Gly	Val	Cys	Ile	Ala	Ile	Cys	
			260					265					270			

Ala Leu Thr Phe Trp Ile Cys Asp Ile Ile Val Thr Tyr Ser Leu Pro  
275 280 285

Val Met Leu Asn Ala Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala  
290 295 300

Val Val Cys Cys Ile Ala Phe Val Phe Val Tyr Leu Lys Val Pro Glu  
305 310 315 320

Thr Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe Ala Val Gly  
325 330 335

Ala Lys Gln Ala Gln Ala Thr Ile Ala  
340 345

<210> 15  
<211> 1009  
<212> DNA  
<213> Triticum aestivum

<400> 15  
tgaacctgga gtgaagcatg caatgttctg tggcatagga ttacagatcc tgcagcagtt 60  
tgcagggtatc aatggagtc cctactacac acctcagata cttgagcaag caggtgtcgg 120  
ggttcttcta tcaaacattg gactaagetc ttcttcagca tctattctta ttagtgccct 180  
gacaaaccttg ctgatgcttc ccagcattgg catcgccatg agactcatgg atatgtcagg 240  
aagaagggtt cttctccttc caacaatccc tgtcttgata gtacgcctag ctgtcttggg 300  
tttagtgaat gttctggatg tgggaacct ggtgcacgct gcgctctcaa cgatcagcgt 360  
catcgctctat ttctgcttct tctgcatggg gtttgggct atcccaata ttctctgcgc 420  
ggagattttc cccacctctg tccgtggcat ctgcatagcc atctgcgcgc taaccttctg 480  
gatcgggcac atcatcgtga catacactct ccccgatg ctcaatgcca ttggtctcgc 540  
tygagtcttc ggcataatg ccacgtttg tgtactagcc ttgtattctg tctacatgaa 600  
gttccctgag acaaaaggga tgcacctgga ggtcatcacc gagttcttct ctgtcggggc 660  
aaagcagggc aaggaagcca cggactagtt gctctgctcc ggtgatccgc gtgcgtgggtg 720  
gtaattttgt ggtgtcataa ctactactac actgggttaac ccgcgatgct ttggtgaaga 780  
aacttcaaag agagcagata cgggaagact tacatcgtga ggtgaattg tgtcgtcgtg 840  
ggcgggcttt tgggaagtagg atatgtact agatcatctg ctctttctgc tttggaactt 900  
tctatttggtg ttattcagaa ttcttgcgcc atgtaactag tgcgtttatc acaatttatg 960  
tcgattatgt gtttgccata aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1009

<210> 16  
<211> 228  
<212> PRT  
<213> Triticum aestivum

<400> 16  
Glu Pro Gly Val Lys His Ala Leu Phe Val Gly Ile Gly Leu Gln Ile  
1 5 10 15

Leu Gln Gln Phe Ala Gly Ile Asn Gly Val Leu Tyr Tyr Thr Pro Gln  
20 25 30

Ile Leu Glu Gln Ala Gly Val Gly Val Leu Leu Ser Asn Ile Gly Leu  
35 40 45

Ser Ser Ser Ser Ala Ser Ile Leu Ile Ser Ala Leu Thr Thr Leu Leu  
50 55 60

Met Leu Pro Ser Ile Gly Ile Ala Met Arg Leu Met Asp Met Ser Gly  
65 70 75 80

Arg Arg Phe Leu Leu Leu Ser Thr Ile Pro Val Leu Ile Val Ala Leu  
85 90 95

Ala Val Leu Val Leu Val Asn Val Leu Asp Val Gly Thr Met Val His  
100 105 110



Ala Ala Leu Ser Thr Ile Ser Val Ile Val Tyr Phe Cys Phe Phe Val  
115 120 125

Met Gly Phe Gly Pro Ile Pro Asn Ile Leu Cys Ala Glu Ile Phe Pro  
130 135 140

Thr Ser Val Arg Gly Ile Cys Ile Ala Ile Cys Ala Leu Thr Phe Trp  
145 150 155 160

Ile Gly Asp Ile Ile Val Thr Tyr Thr Leu Pro Val Met Leu Asn Ala  
165 170 175

Ile Gly Leu Ala Gly Val Phe Gly Ile Tyr Ala Ile Val Cys Val Leu  
180 185 190

Ala Phe Val Phe Val Tyr Met Lys Val Pro Glu Thr Lys Gly Met Pro  
195 200 205

Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala Lys Gln Gly Lys  
210 215 220

Glu Ala Thr Asp  
225

<110> 17  
<111> 615  
<112> DNA  
<113> Zea mays

<220>  
<221> unsure  
<222> (149)

<220>  
<221> unsure  
<222> (271)

<220>  
<221> unsure  
<222> (304)

<220>  
<221> unsure  
<222> (334)

<220>  
<221> unsure  
<222> (357)

<220>  
<221> unsure  
<222> (476)

<220>  
<221> unsure  
<222> (599)

<220>  
<221> unsure  
<222> (602)

<400> 17  
gaaaagaact ctcttgagta ccacaaaaaa aaacattggc attctctgta gtagagcaca 60  
gagcgaaccg tcaacgatgg ctcccgctcc gctgccggcg gccatcgagc ccgggaagaa 120  
aggcaacgtc aagttcgcc tgcctgcnc catcctcgcc tcaatgacct ccattcttct 180  
cggctatgat atcggagtga tgagcggcgc gtcgttgtag atcaagaagg acctgaaaat 240

cagcgacgtg aagctggaga tectgatggg natcctcaac gtgtactcgc tcatcggtc 300  
 gttngcgga gggcggaagt cgaactggat cggncgacgt acaccatcgt gttcgcnegc 360  
 gtgatcttct tgcggggcgc ttectcatgg gcttcgacgt gaactactgg atgctcatgt 420  
 tggcgagctt cgtggcgagg atcggggtgg gctacggcgt catgatcgca accgtntaca 480  
 cggcggaagt gtcccgcat cggcgcgagg ctctctgaag tggttccagg aggtgttcat 540  
 cacttcggca tectctaggt acgtgtcaat aaggcttttc cgttcggtt cgtgggatng 600  
 onctaatgtc ggcatt 615

<110> 18  
 <111> 167  
 <112> PFT  
 <113> Zea mays

<114>  
 <115> UNSURE  
 <116> (34)

<117>  
 <118> UNSURE  
 <119> (85)

<120>  
 <121> UNSURE  
 <122> (98)

<123>  
 <124> UNSURE  
 <125> (112)

<126>  
 <127> UNSURE  
 <128> (151)

<400> 18  
 Ser Arg Ala Gln Ser Glu Pro Ser Thr Met Ala Ser Ala Pro Leu Pro  
 1 5 10 15  
 Ala Ala Ile Glu Pro Gly Lys Lys Gly Asn Val Lys Phe Ala Phe Ala  
 20 25 30  
 Cys Xaa Ile Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp Ile  
 35 40 45  
 Gly Val Met Ser Gly Ala Ser Leu Tyr Ile Lys Lys Asp Leu Lys Ile  
 50 55 60  
 Ser Asp Val Lys Leu Glu Ile Leu Met Gly Ile Leu Asn Val Tyr Ser  
 65 70 75 80  
 Leu Ile Gly Ser Xaa Ala Ala Gly Arg Thr Ser Asp Trp Ile Gly Arg  
 85 90 95  
 Arg Xaa Thr Ile Val Phe Ala Ala Val Ile Phe Phe Ala Gly Ala Xaa  
 100 105 110  
 Leu Met Gly Phe Ala Val Asn Tyr Trp Met Leu Met Phe Gly Arg Phe  
 115 120 125  
 Val Ala Gly Ile Gly Val Gly Tyr Ala Leu Met Ile Ala Thr Val Tyr  
 130 135 140  
 Thr Ala Glu Val Ser Pro Xaa Ser Ala Arg Gly Phe Leu Thr Ser Phe  
 145 150 155 160  
 Pro Glu Val Phe Ile Thr Ser  
 165

<210> 19  
 <211> 1914  
 <212> DNA  
 <213> Sea mays

<400> 19  
 gcaagagagca cggcacattta tctctaaacgg gagatcaaaag aagtagccggt taacgatgggc 60  
 ttcggagagag ctggcaaaagg ccgtcgagacc caggaaagaag ggcaacgtca agtatgcctc 120  
 catangtacc atccctgggctt ccattggcctc tgtcatcctt ggctatgaca ttgggggtgat 180  
 gaggtagagcg ggcattgtaca tcaagaaggga cctgaatata acggagcgtgc agctggagat 240  
 cctgatccggg atccctcagtc tctactcgtt gttcgggacc ttcgctggcg cggggacgtc 300  
 cyacaggatc gggggcgcgtt tgacccgtcgt gttcggcgtt gtcattctct tctgagggtc 360  
 jttggtccatg ggttttcggcg tcaactaagg catgctccatg gggggcgcgtt tctgagggtc 420  
 agtcgggtgtg ggttacggggg gcatgatcgc gccctgtgtac acgggcggaga tctcgccctgc 480  
 jtggtcccggt ggcttccctga ccaccttccc ggaggtgttc atcaacatcg gcattcctgt 540  
 tggctacctg tcaaaccttcg cgttcggcgcg cctcccgctc cactcgggtt gggcgctcat 600  
 gctcgccatt ggcgaggttc cgtccgggctt gctcgcgctc ctgggtgtct gcattgcctga 660  
 jtcggtccggg tgggtgggtct tgaaggggcgg cctcgcgggac gccagggtgt tcttagagaa 720  
 gacctctgcc acgcccagagg aggcgcgcga gccgggtggcc gacatcaagg ccgcccgggg 780  
 gattccgaag ggccctcgacg gggacgtagt caccgtaccc ggcaaggagc aaggcggcgg 840  
 tyagttgcag gtgtggaaga agctcatcct gtcccccacc ccggctgttc gacgcatact 900  
 jctctccggcc gtgggtctctc acttcttcca gcaggcttct ggccagcgact ccgtcgtcca 960  
 jtabagcgcc cgcctgttca agagcgcggg gatcaccgac gacaaacaag tcttgggggt 1020  
 cactcgcgcg gtggggcgtga ccaagacgtt cttcatcctg gtggccacgt tcttgcctga 1080  
 ccgcyggggg cgtcggcctc tgcctgctgt cagcacgggg gggatgattg tctcgtctat 1140  
 ctgcctcggg tccggggtcca ccgtcggcggg gcattcaccc gacacacaag tccgttgggc 1200  
 ccgtcgcctg tgcctcgggt caacctgtc ctacatcgcc ttcttctcca tccgctcggg 1260  
 gcccatcccg ggctgtgtaca cctcgggaaat attcccgctg cagggtggcg cgttgggctt 1320  
 ccgggtgggt gtggcgagca acccgctcac cagcgccgtc attcccatga ccttccctgt 1380  
 cctccccaag gccatcacca tccgggggag cttcttctcc tactccggga tcccgcggtt 1440  
 ccttgggggt ttcttcttcca cgtgcctccc ggagacacgc ggcgggacgc tggaggagat 1500  
 ggcaagctg ttccggcatgc cagacacggg catggctgaa gaagcagaag accccgcagc 1560  
 caaggagaag gtgggtggaac tgcctagcag caagtagggt gctatcccag agcacaggct 1620  
 aagtgaacta gatggacaag atcattgtct ttccaactaa ttagatgggc aagaataact 1680  
 aagactgccc tatgagggtg cgtgggttcaa ccagagatca ttctgctcct tttcttttcc 1740  
 cttccttttt cgagtaacct tcccattcgt cgtgggtcagt acgatgttgg gtcgttggga 1800  
 gttagtgggt tcagagtcgg cgtgtgcttt gcaagccagg gctgaaccca caatcatcag 1860  
 taacaaaaat tcttccgttt gctttgcaag ccaaaaaaaaa aaaaaaaaaa aaaa 1914

<210> 20  
 <211> 513  
 <212> PRT  
 <213> Sea mays

<400> 20  
 Met Ala Ser Asp Glu Leu Ala Lys Ala Val Glu Pro Arg Lys Lys Gly  
 1 5 10 15  
 Asn Val Lys Tyr Ala Ser Ile Cys Ala Ile Leu Ala Ser Met Ala Ser  
 20 25 30  
 Val Ile Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ala Met Tyr  
 35 40 45  
 Ile Lys Lys Asp Leu Asn Ile Thr Asp Val Gln Leu Glu Ile Leu Ile  
 50 55 60  
 Gly Ile Leu Ser Leu Tyr Ser Leu Phe Gly Ser Phe Ala Gly Ala Arg  
 65 70 75 80  
 Thr Ser Asp Arg Ile Gly Arg Arg Leu Thr Val Val Phe Ala Ala Val  
 85 90 95  
 Ile Phe Phe Val Gly Ser Leu Leu Met Gly Phe Ala Val Asn Tyr Gly  
 100 105 110

Met	Leu	Met	Ala	Gly	Arg	Phe	Val	Ala	Gly	Val	Gly	Val	Gly	Tyr	Gly			
		115					120					125						
Gly	Met	Ile	Ala	Pro	Val	Tyr	Thr	Ala	Glu	Ile	Ser	Pro	Ala	Ala	Ser			
	130					135					140							
Arg	Gly	Phe	Leu	Thr	Thr	Phe	Pro	Glu	Val	Phe	Ile	Asn	Ile	Gly	Ile			
145					150					155					160			
Leu	Leu	Gly	Tyr	Leu	Ser	Asn	Phe	Ala	Phe	Ala	Arg	Leu	Pro	Leu	His			
				165					170					175				
Leu	Gly	Trp	Arg	Val	Met	Leu	Ala	Ile	Gly	Ala	Val	Pro	Ser	Gly	Leu			
			180					185					190					
Leu	Ala	Leu	Leu	Val	Phe	Cys	Met	Pro	Glu	Ser	Pro	Arg	Trp	Leu	Val			
		195					200					205						
Leu	Lys	Gly	Arg	Leu	Ala	Asp	Ala	Arg	Ala	Val	Leu	Glu	Lys	Thr	Ser			
	210					215					220							
Ala	Thr	Pro	Glu	Glu	Ala	Ala	Glu	Arg	Leu	Ala	Asp	Ile	Lys	Ala	Ala			
225					230					235					240			
Ala	Gly	Ile	Pro	Lys	Gly	Leu	Asp	Gly	Asp	Val	Val	Thr	Val	Pro	Gly			
				245				250						255				
Lys	Glu	Gln	Gly	Gly	Gly	Glu	Leu	Gln	Val	Trp	Lys	Lys	Leu	Ile	Leu			
			260					265					270					
Ser	Pro	Thr	Pro	Ala	Val	Arg	Arg	Ile	Leu	Leu	Ser	Ala	Val	Gly	Leu			
		275					280					285						
His	Phe	Phe	Gln	Gln	Ala	Ser	Gly	Ser	Asp	Ser	Val	Val	Gln	Tyr	Ser			
	290					295					300							
Ala	Arg	Leu	Phe	Lys	Ser	Ala	Gly	Ile	Thr	Asp	Asp	Asn	Lys	Leu	Leu			
305					310					315				320				
Gly	Val	Thr	Cys	Ala	Val	Gly	Val	Thr	Lys	Thr	Phe	Phe	Ile	Leu	Val			
				325					330					335				
Ala	Thr	Phe	Leu	Leu	Asp	Arg	Ala	Gly	Arg	Arg	Pro	Leu	Leu	Leu	Ile			
			340					345				350						
Ser	Thr	Gly	Gly	Met	Ile	Val	Ser	Leu	Ile	Cys	Leu	Gly	Ser	Gly	Leu			
		355					360					365						
Thr	Val	Ala	Gly	His	His	Pro	Asp	Thr	Lys	Val	Ala	Trp	Ala	Val	Ala			
	370					375					380							
Leu	Cys	Ile	Ala	Ser	Thr	Leu	Ser	Tyr	Ile	Ala	Phe	Phe	Ser	Ile	Gly			
385					390					395				400				
Leu	Gly	Pro	Ile	Thr	Gly	Val	Tyr	Thr	Ser	Glu	Ile	Phe	Pro	Leu	Gln			
				405				410						415				
Val	Arg	Ala	Leu	Gly	Phe	Ala	Val	Gly	Val	Ala	Ser	Asn	Arg	Val	Thr			
			420					425				430						
Ser	Ala	Val	Ile	Ser	Met	Thr	Phe	Leu	Ser	Leu	Ser	Lys	Ala	Ile	Thr			
		435					440					445						
Ile	Gly	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Gly	Ile	Ala	Ala	Val	Ala	Trp			
	450					455					460							

Val Phe Phe Phe Thr Cys Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu  
 465 470 475 480

Glu Met Gly Lys Leu Phe Gly Met Pro Asp Thr Gly Met Ala Glu Glu  
 485 490 495

Ala Glu Asp Ala Ala Ala Lys Glu Lys Val Val Glu Leu Pro Ser Ser  
 500 505 510

Lys

<210> 21  
 <211> 1017  
 <212> DNA  
 <213> Dryza sativa

<400> 21  
 attacatgta agctcgtgac ggcacgagct tacactcgac cgcactact gtacacgggc 60  
 cagagcgagc ctctctctcc tctgcacccac cggagatggc ttcgcgcgcg ctgcgcggagg 120  
 ccctcgcgcg gaagaagaag ggcacagctc ggttcgcctt cgcctcgcgc atctctgcct 180  
 ccctgacctc cctctctctc ggtacagata cgggggtgat gagcggggcg tcgctgtaca 240  
 tcaagaacga cttcaacatc agtgacggga aggtggaggc tctcatgggc atactgaacc 300  
 tctactcgtc cctcggctcc ttgcgcggcg ggcggacgtc ggaactggac ggcgcggcgt 360  
 acacatcgt gttcgcgcgc gtcattattt cgcgcggggs gttctcctat gggttcgcgc 420  
 tcaactacgc catgctcctg ttgcgcgcgt cgttggcgcg cctcggcgtg ggtacgcgc 480  
 tcatgatgc gcgggtgtac acgcgcgagg tctgcgcgcg gtcgcgcgtt ggttctctga 540  
 cgtcgttccc ggaggtgttc atcaactctg gcctcctgt cgggtacgtc tcgaactatg 600  
 attctctccg cttgcgcgtg aaactcgggt ggcgcctcat gctcggcctc ggcgcgcgcg 660  
 cctcgtctgt gctcgcgcgc atggttgcctg gcctgcgcga gtcgcgcgcg tggctggtca 720  
 tgaagggagc cctcgcgcgc gcaaggttg tcttggagaa gacctcgcac acggcgcgag 780  
 aggcgcgcga gcgcctgggc gacatcaagg cgcgcgcgcg cctcctcgag gagctcgcag 840  
 ggcagctgtt gacgcctccc aagagagggg ggggaaacga gaagcgggtg tgggaaggagc 900  
 tctctctgtc cgcgcgcgcg gcatgcggc gcctcctgt gtcgcgggac ggcctcact 960  
 tcttccagca tgcgttgggc attcaactcg tctctctcta cagcctctc gtgttcaaga 1020  
 gccgcggatt aacgaaacgc aaacacttct tgggcacccac ctggcgcgtc ggtgtcacca 1080  
 agaggtcttt cactctgttg ggcacttctt ccatcgacgg cgtcgggcgc cggcgcctgt 1140  
 tcttgggcag cagcgggcgc ataactctct cctcctcctg cctcgggcgc ggcctcaccg 1200  
 tcttgggcga gcaccccgac gcaagatac cttgggcctt cggcctaagg atcgcctcca 1260  
 cctcgccta cgtcgccttc ttctccatcg gcttgggcgc cctcagctgg gtgtacagct 1320  
 cggagatctt ccgcctcag gtcgcgcgcg tgggtctgtc gctcgggcgc gcgcaccaac 1380  
 gcttccagag cggcgtcctc tcatgacct tctgtctgt gtcacaggcc atcaccatcg 1440  
 ggcgcagctt cttctctctc tccggcctcg ccgcctctgc ctgggtgttc ttctacacct 1500  
 acctcctcga gaccgcgcgc cggacgtctg aggagatgag caagctgttc ggcgacacgg 1560  
 ccgcgcctc ggaatcagac gagccagcca aggagaagaa gaaggtggaa atggcgcgca 1620  
 ctaactgac aaactaacgc caaaatcacc aaactcctag ggttttcttg caaaaacgtg 1680  
 tctgtactg gctagctagc aagtagtagc agcaacgtgg gaagattcgc tgatccggcg 1740  
 ttgctggaga gcgacggcgc ggcacgacaa agctgagctc cagctcgaga cttcttaaaa 1800  
 tctcttcaa gtacatggat tttattttgc tctttgcttt gtcgtaaaaa gttgtactat 1860  
 ggcaggaaga ataccagtat gtagcaaggc tgaggttgtg tgtagctact agaagtgtca 1920  
 gtcacgttgt tcttgtaaga aatgtttaac tgttaattaa gcagtattgt tgcagtaatc 1980  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaa 2017

<210> 22  
 <211> 510  
 <212> PRT  
 <213> Dryza sativa

<220>  
 <221> UNSURE  
 <222> (102)

<400> 22  
 Met Ala Ser Ala Ala Leu Pro Glu Ala Val Ala Pro Lys Lys Lys Gly  
 1 5 10 15

Asn	Val	Arg	Phe	Ala	Phe	Ala	Cys	Ala	Ile	Leu	Ala	Ser	Met	Thr	Ser	20	25	30
Ile	Leu	Leu	Gly	Tyr	Asp	Ile	Gly	Val	Met	Ser	Gly	Ala	Ser	Leu	Tyr	35	40	45
Ile	Lys	Lys	Asp	Phe	Asn	Ile	Ser	Asp	Gly	Lys	Val	Glu	Val	Leu	Met	50	55	60
Gly	Ile	Leu	Asn	Leu	Tyr	Ser	Leu	Ile	Gly	Ser	Phe	Ala	Ala	Gly	Arg	65	70	75
Thr	Ser	Asp	Trp	Ile	Gly	Arg	Arg	Tyr	Thr	Ile	Val	Phe	Ala	Ala	Val	85	90	95
Ile	Phe	Phe	Ala	Gly	Xaa	Phe	Leu	Met	Gly	Phe	Ala	Val	Asn	Tyr	Ala	100	105	110
Met	Leu	Met	Phe	Gly	Arg	Phe	Val	Ala	Gly	Ile	Gly	Val	Gly	Tyr	Ala	115	120	125
Leu	Met	Ile	Ala	Pro	Val	Tyr	Thr	Ala	Glu	Val	Ser	Pro	Ala	Ser	Ala	130	135	140
Arg	Gly	Phe	Leu	Thr	Ser	Phe	Pro	Glu	Val	Phe	Ile	Asn	Phe	Gly	Ile	145	150	155
Leu	Leu	Gly	Tyr	Val	Ser	Asn	Tyr	Ala	Phe	Ser	Arg	Leu	Pro	Leu	Asn	165	170	175
Leu	Gly	Trp	Arg	Ile	Met	Leu	Gly	Ile	Gly	Ala	Ala	Pro	Ser	Val	Leu	180	185	190
Leu	Ala	Leu	Met	Val	Leu	Gly	Met	Pro	Glu	Ser	Pro	Arg	Trp	Leu	Val	195	200	205
Met	Lys	Gly	Arg	Leu	Ala	Asp	Ala	Lys	Val	Val	Leu	Glu	Lys	Thr	Ser	210	215	220
Asp	Thr	Ala	Glu	Glu	Ala	Ala	Glu	Arg	Leu	Ala	Asp	Ile	Lys	Ala	Ala	225	230	235
Ala	Gly	Ile	Pro	Glu	Glu	Leu	Asp	Gly	Asp	Val	Val	Thr	Val	Pro	Lys	245	250	255
Arg	Gly	Ser	Gly	Asn	Glu	Lys	Arg	Val	Trp	Lys	Glu	Leu	Ile	Leu	Ser	260	265	270
Pro	Thr	Pro	Ala	Met	Arg	Arg	Ile	Leu	Leu	Ser	Gly	Ile	Gly	Ile	His	275	280	285
Phe	Phe	Gln	His	Ala	Leu	Gly	Ile	His	Ser	Val	Val	Phe	Tyr	Ser	Pro	290	295	300
Leu	Val	Phe	Lys	Ser	Pro	Gly	Leu	Thr	Asn	Asp	Lys	His	Phe	Leu	Gly	305	310	315
Thr	Thr	Trp	Pro	Phe	Gly	Val	Thr	Lys	Arg	Leu	Phe	Ile	Leu	Leu	Ala	325	330	335
Thr	Phe	Phe	Ile	Asp	Gly	Val	Gly	Arg	Arg	Pro	Leu	Leu	Leu	Gly	Ser	340	345	350
Thr	Gly	Gly	Ile	Ile	Leu	Ser	Leu	Ile	Gly	Leu	Gly	Ala	Gly	Leu	Thr	355	360	365

Val	Val	Gly	Gln	His	Pro	Asp	Ala	Lys	Ile	Pro	Trp	Ala	Ile	Gly	Leu
370						375					380				
Ser	Ile	Ala	Ser	Thr	Leu	Ala	Tyr	Val	Ala	Phe	Phe	Ser	Ile	Gly	Leu
385					390					395				400	
Gly	Pro	Ile	Thr	Trp	Val	Tyr	Ser	Ser	Glu	Ile	Phe	Pro	Leu	Gln	Val
				405					410					415	
Arg	Ala	Leu	Gly	Cys	Ser	Leu	Gly	Val	Ala	Ala	Asn	Arg	Val	Thr	Ser
			420					425					430		
Gly	Val	Ile	Ser	Met	Thr	Phe	Leu	Ser	Leu	Ser	Lys	Ala	Ile	Thr	Ile
		435					440					445			
Gly	Gly	Ser	Phe	Phe	Leu	Tyr	Ser	Gly	Ile	Ala	Ala	Leu	Ala	Trp	Val
	450					455					460				
Phe	Phe	Tyr	Thr	Tyr	Leu	Pro	Glu	Thr	Arg	Gly	Arg	Thr	Leu	Glu	Glu
465					470					475				480	
Met	Ser	Lys	Leu	Phe	Gly	Asp	Thr	Ala	Ala	Ala	Ser	Glu	Ser	Asp	Glu
				485					490					495	
Pro	Ala	Lys	Glu	Lys	Lys	Lys	Val	Glu	Met	Ala	Ala	Thr	Asn		
		500						505					510		

4210\* 23  
 4211\* 1853  
 4212\* DNA  
 4213\* Glycine max

4400* 23	gacagagagt	tctctctcttc	acatatacatc	atacttagat	agtcagatac	atcacccaat	60
	aattaaatta	aatacatgct	agcaatttaa	cagtaactct	ttctctaata	tctctctcat	120
	attttctctt	ctggggatat	tcagctaatt	aaactaagtc	actaagatga	ctgaggggaaa	180
	gttaggtgaa	gotgcagaag	ctcataagac	aacttcaggat	ttcgatctct	caaagaagcg	240
	caaaagggaac	aagtatgctt	ttgcttggtc	tatgctggcc	tcctatgaatt	ccatcttgct	300
	tugttatgat	attggagtgga	tgagtgggagc	agccatatac	ataaaaaagg	acctgaaaagt	360
	ctgggacgag	caaatcgaga	tcttgctcgg	aatcatcaac	ctatactctc	tgataggctc	420
	atgtctcgcc	ggcagaacct	cgaactggat	aggtcccggt	tacacgattg	ttttcgccgg	480
	cccatctctc	cttgctggag	caattctcat	gggtttctcc	cccaattatt	ctttctctcat	540
	gtttggccgt	ttcgctcgctg	gcattggcat	cggtacgccc	ctcatgatag	cccccgctcta	600
	caacggccgag	gtctccccgg	ctctctctctg	tggtctctctc	aactctctcc	ctgaggttatt	660
	tattcaatgga	gggatattaa	ttggatacat	atcaaaactat	gcatttttga	agctgacact	720
	aaaggtggga	tggtcgaatga	tgcttgaggat	tggtgcgaata	cttcgggtac	tcctaacagt	780
	aggagtggtg	gogatgcggg	agtcaccaag	gtggcttggtg	atgagggggtc	gtttggggaga	840
	ggcaagaaaa	gtgcttaaca	aaacctcaga	cagcaaggaa	gaggcccaac	taaggcttagc	900
	gaaatcaaaa	caagcccgag	ggatccccga	gagttgcaac	gacgacgtcg	ttcaggtaaaa	960
	caaacaaaagc	aacgggtgaag	gtgtatggaa	agagctcttc	ctctatccaa	cgcccgcaat	1020
	togtcacatc	gtaatcgctg	cccttggtat	tcactctctc	caacaagcgt	cgggcgtaga	1080
	cgccgtcggtt	ttgtacagcc	ccaggatctt	cgaaaaaggct	gggattacaa	acgacacgca	1140
	caagctctctt	gcaacccgtg	ccgttggtatt	cggttaagacc	gtgttcattct	tggtgggtac	1200
	ctttacgttg	gaacccgtgg	gtcgctcgctc	gttggttattg	cttagtgctg	goggcctgggt	1260
	gtctctcgctt	ctcacgcttg	cgatcagcct	cactgttatt	gatcattcgg	agaggaaaatt	1320
	aatgtggggcc	gttggtatoga	gcatagoccat	gggtgttggtc	taogtgggca	cgttctctcat	1380
	cggtgcccgggt	cccatcacgt	gggtctatag	ttctgagatc	ttcccgttga	ggctgcggggc	1440
	gcaagggtgog	gocgcccggag	ttgcccgtgaa	taggaccact	agcgcgggttg	cttcaatgac	1500
	ttttctcgctc	ctcaactagag	ccatcactat	tggtggagct	ttcttctctt	attgtggcat	1560
	tgctactggtt	gggtggatat	ttttttacac	cgctcttgctt	gagaccgggg	gaaaaaacgct	1620
	cgaagacatg	gaagggtctt	ttggtaacttt	taggtccaaa	tccaacgcca	gcaaggctgt	1680
	agaaaaatgag	aatgggcaag	tagcacaagt	ccagctagga	accaatgtcc	aaacttgaaa	1740
	aatgagtatt	gggacatcca	gtaatagtga	agtaatttcg	tgattttttt	tttggttttt	1800
	acttttttaga	ctagttcttc	aaatcaaaaac	gagaagttaa	agtgaaaaaa	aaa	1853



<210> 24  
 <211> 523  
 <212> PRT  
 <213> Glycine max

<400> 24  
 Met Thr Glu Gly Lys Leu Val Glu Ala Ala Glu Ala His Lys Thr Leu  
 1 5 10 15  
 Gln Asp Phe Asp Pro Pro Lys Lys Arg Lys Arg Asn Lys Tyr Ala Phe  
 20 25 30  
 Ala Cys Ala Met Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp  
 35 40 45  
 Ile Gly Val Met Ser Gly Ala Ala Ile Tyr Ile Lys Arg Asp Leu Lys  
 50 55 60  
 Val Ser Asp Glu Gln Ile Glu Ile Leu Leu Gly Ile Ile Asn Leu Tyr  
 65 70 75 80  
 Ser Leu Ile Gly Ser Cys Leu Ala Gly Arg Thr Ser Asp Trp Ile Gly  
 85 90 95  
 Pro Arg Tyr Thr Ile Val Phe Ala Gly Thr Ile Phe Phe Val Gly Ala  
 100 105 110  
 Leu Leu Met Gly Phe Ser Pro Asn Tyr Ser Phe Leu Met Phe Gly Arg  
 115 120 125  
 Phe Val Ala Gly Ile Gly Ile Gly Tyr Ala Leu Met Ile Ala Pro Val  
 130 135 140  
 Tyr Thr Ala Glu Val Ser Pro Ala Ser Ser Arg Gly Phe Leu Thr Ser  
 145 150 155 160  
 Phe Pro Glu Val Phe Ile Asn Gly Gly Ile Leu Ile Gly Tyr Ile Ser  
 165 170 175  
 Asn Tyr Ala Phe Ser Lys Leu Thr Leu Lys Val Gly Trp Arg Met Met  
 180 185 190  
 Leu Gly Val Gly Ala Ile Pro Ser Val Leu Leu Thr Val Gly Val Leu  
 195 200 205  
 Ala Met Pro Glu Ser Pro Arg Trp Leu Val Met Arg Gly Arg Leu Gly  
 210 215 220  
 Glu Ala Arg Lys Val Leu Asn Lys Thr Ser Asp Ser Lys Glu Glu Ala  
 225 230 235 240  
 Gln Leu Arg Leu Ala Glu Ile Lys Gln Ala Ala Gly Ile Pro Glu Ser  
 245 250 255  
 Cys Asn Asp Asp Val Val Gln Val Asn Lys Gln Ser Asn Gly Glu Gly  
 260 265 270  
 Val Trp Lys Glu Leu Phe Leu Tyr Pro Thr Pro Ala Ile Arg His Ile  
 275 280 285  
 Val Ile Ala Ala Leu Gly Ile His Phe Phe Gln Gln Ala Ser Gly Val  
 290 295 300  
 Asp Ala Val Val Leu Tyr Ser Pro Arg Ile Phe Glu Lys Ala Gly Ile  
 305 310 315 320

Thr Asn Asp Thr His Lys Leu Leu Ala Thr Val Ala Val Gly Phe Val  
 325 330 335  
 Lys Thr Val Phe Ile Leu Ala Ala Thr Phe Thr Leu Asp Arg Val Gly  
 340 345 350  
 Arg Arg Pro Leu Leu Leu Ser Ser Val Gly Gly Met Val Leu Ser Leu  
 355 360 365  
 Leu Thr Leu Ala Ile Ser Leu Thr Val Ile Asp His Ser Glu Arg Lys  
 370 375 380  
 Leu Met Trp Ala Val Gly Ser Ser Ile Ala Met Val Leu Ala Tyr Val  
 385 390 395 400  
 Ala Thr Phe Ser Ile Gly Ala Gly Pro Ile Thr Trp Val Tyr Ser Ser  
 405 410 415  
 Glu Ile Phe Pro Leu Arg Leu Arg Ala Gln Gly Ala Ala Ala Gly Val  
 420 425 430  
 Ala Val Asn Arg Thr Thr Ser Ala Val Val Ser Met Thr Phe Leu Ser  
 435 440 445  
 Leu Thr Arg Ala Ile Thr Ile Gly Gly Ala Phe Phe Leu Tyr Cys Gly  
 450 455 460  
 Ile Ala Thr Val Gly Trp Ile Phe Phe Tyr Thr Val Leu Pro Glu Thr  
 465 470 475 480  
 Arg Gly Lys Thr Leu Glu Asp Met Glu Gly Ser Phe Gly Thr Phe Arg  
 485 490 495  
 Ser Lys Ser Asn Ala Ser Lys Ala Val Glu Asn Glu Asn Gly Gln Val  
 500 505 510  
 Ala Gln Val Gln Leu Gly Thr Asn Val Gln Thr  
 515 520

<210> 25  
 <211> 2089  
 <212> DNA  
 <213> Triticum aestivum

<400> 25  
 agcaccasta aactatacac aaggaggagc tcgtcggcat aatcctcagg cagcgagcag 60  
 aggggcgtcg tcgacgatgg accgcgcgcg actcccgggc gccgtcgagc ccaagaagaa 120  
 gggcaacgtg aggttcgcct tcgcctgcgc catcctcgcc tccatgacct ccatacctct 180  
 cggctacgac atcggcgtga tgagcggagc gtcgtgtgac atccagaagg atctgaagat 240  
 caacqacacc cagctggagg tctcatggg catcctcaac gtgtactcgc tcattggctc 300  
 ctctcgcggc gggcggacgt ccgactggat cggcgggcgc ttcaccatcg tcttcgcgcg 360  
 cgtcatcttc ttcgcggggc cctcatcat gggcttctcc gtcaactacg ccattgctcat 420  
 gttcgggggc ttcgtggcgc gcctcggcgt ggggtacgct ctcattgatg cggccgtgaa 480  
 caaggggcag gtgtcccccg cgtctgcgcg tggggttctc acatccttcc cggaggtgtt 540  
 catcaacttc ggcattctcc tcggatatgt ctccaaactc gcttcgcgcg gcctctccct 600  
 ccgcctcggc tggcgcatta tgctcggcat aggcgcgggt cgcctcgtcc tgctcgcgtt 660  
 catggtgctc ggcattgcgc agtctccccc gtggctcgtc atgaaggggc gtctcgcgga 720  
 cggcaaggtt gtgcttgcca agacgtccga cagcgcggaa gaggcgcgcg agcgcacgcg 780  
 ccacattaag actgcgcgcg gcctccctct gggcctcgac ggcgacgtgg tcccgcgtgc 840  
 caaaaacaaa ggaagcagcg aggagaagcg cgttttgaa gacctcctcc tgtcaccgac 900  
 catagccatg cggcacatcc tcctcggggg aatcggcctc cacttctctc agcagtcttc 960  
 gggcatcgac gccgtcgtgc tcctacagccc gctagtcttc aagagcgcgc gcattcacggg 1020  
 ccacagccgt ctccgcggca ccacgcgtggc ggtcgggggc accaatacgg tcttcctcct 1080  
 ggtggccacc ttcctcctcg accgcctcgc cggcgggcgc ctgggtgctga ccagcacggg 1140  
 cggcatgctc gtctccttag tgggcctcgc gacggggctc accgtcatca gccgcacccc 1200  
 ggacgagaag atcacctggg ccctcgtctc gtgcattctc tgcattcatg cctacgtggc 1260

```

tttctttctcc atcgggcctcg gccccatcac gtgggtgtac agctcggaga tcttcccgt 1320
gcaagtggcg ggcgtgggct gctccctggg cgtggcgcgc aaccgcctga ccagcggcgt 1380
gatctccatg accttcattt cgtgtccaa ggccatgacc atcggggggg ccttcttct 1440
cttcggcggc atcgcctcat tcgcctgggt gttcttcttc gctacctgc cggagaccgc 1500
cggcggcagc ctggaggaca tgagctcgct gttcggcaac acggccacgc acaagcaggg 1560
cgccggggaa gccgacgacg acgcggggga gaagaagggt gaaatggcgc ccaccaactg 1620
accgcaagtt ggcagatcgc gatgggaaga cttgcgtgtg atcgtctcg gctagctagc 1680
tgccacaagg ccacatagat gacgaagtag cgtgggaaga ttgcctgac cggccggagc 1740
tgccggaggg ccagcggcag ctccagctcg atcagacgt taatggcttc ttaaagtgtc 1800
taagttaaat gtttcgtctt ttggttttgt ccgggtagggt cgtgagcaat ccggtagctc 1860
cgatgcacaag gctaatacag gccggacgga ctgactact gtagtagact gtagagggtg 1920
accgttgcta cttccgtggc gtttgtctgc atgattagga gagaaaactg gcggtggttc 1980
gaggactcta cctgcgcgac gagtgaatca agcagccac ggaaaatgtg taagaaaaaa 2040
atattaagta tgtgtattgt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2089

```

<210> 26  
 <211> 539  
 <212> PRT  
 <213> Triticum aestivum

<400> 26  
 Ala Pro Leu Asn Tyr Thr Gln Gly Gly Pro Arg Arg His Asn Pro Gln  
 1 5 10 15  
 Ala Ala Ser Arg Gly Ala Ser Ser Thr Met Asp Arg Ala Ala Leu Pro  
 20 25 30  
 Ala Ala Val Glu Pro Lys Lys Lys Gly Asn Val Arg Phe Ala Phe Ala  
 35 40 45  
 Cys Ala Ile Leu Ala Ser Met Thr Ser Ile Leu Leu Gly Tyr Asp Ile  
 50 55 60  
 Gly Val Met Ser Gly Ala Ser Leu Tyr Ile Gln Lys Asp Leu Lys Ile  
 65 70 75 80  
 Asn Asp Thr Gln Leu Glu Val Leu Met Gly Ile Leu Asn Val Tyr Ser  
 85 90 95  
 Leu Ile Gly Ser Phe Ala Ala Gly Arg Thr Ser Asp Trp Ile Gly Arg  
 100 105 110  
 Arg Phe Thr Ile Val Phe Ala Ala Val Ile Phe Phe Ala Gly Ala Leu  
 115 120 125  
 Ile Met Gly Phe Ser Val Asn Tyr Ala Met Leu Met Phe Gly Arg Phe  
 130 135 140  
 Val Ala Gly Ile Gly Val Gly Tyr Ala Leu Met Ile Ala Pro Val Asn  
 145 150 155 160  
 Thr Gly Glu Val Ser Pro Ala Ser Ala Arg Gly Val Leu Thr Ser Phe  
 165 170 175  
 Pro Glu Val Phe Ile Asn Phe Gly Ile Leu Leu Gly Tyr Val Ser Asn  
 180 185 190  
 Phe Ala Phe Ala Arg Leu Ser Leu Arg Leu Gly Trp Arg Ile Met Leu  
 195 200 205  
 Gly Ile Gly Ala Val Pro Ser Val Leu Leu Ala Phe Met Val Leu Gly  
 210 215 220  
 Met Pro Glu Ser Pro Arg Trp Leu Val Met Lys Gly Arg Leu Ala Asp  
 225 230 235 240

Ala Lys Val Val Leu Ala Lys Thr Ser Asp Thr Pro Glu Glu Ala Ala  
245 250 255

Glu Arg Ile Ala Asp Ile Lys Thr Ala Ala Gly Ile Pro Leu Gly Leu  
260 265 270

Asp Gly Asp Val Val Pro Val Pro Lys Asn Lys Gly Ser Ser Glu Glu  
275 280 285

Lys Arg Val Leu Lys Asp Leu Ile Leu Ser Pro Thr Ile Ala Met Arg  
290 295 300

His Ile Leu Ile Ala Gly Ile Gly Ile His Phe Phe Gln Gln Ser Ser  
305 310 315 320

Gly Ile Asp Ala Val Val Leu Tyr Ser Pro Leu Val Phe Lys Ser Ala  
325 330 335

Gly Ile Thr Gly Asp Ser Arg Leu Arg Gly Thr Thr Val Ala Val Gly  
340 345 350

Ala Thr Asn Thr Val Phe Ile Leu Val Ala Thr Phe Leu Leu Asp Arg  
355 360 365

Ile Arg Arg Arg Pro Leu Val Leu Thr Ser Thr Gly Gly Met Leu Val  
370 375 380

Ser Leu Val Gly Leu Ala Thr Gly Leu Thr Val Ile Ser Arg His Pro  
385 390 395 400

Asp Glu Lys Ile Thr Trp Ala Ile Val Leu Cys Ile Phe Cys Ile Met  
405 410 415

Ala Tyr Val Ala Phe Phe Ser Ile Gly Leu Gly Pro Ile Thr Trp Val  
420 425 430

Tyr Ser Ser Glu Ile Phe Pro Leu His Val Arg Ala Leu Gly Cys Ser  
435 440 445

Leu Gly Val Ala Val Asn Arg Leu Thr Ser Gly Val Ile Ser Met Thr  
450 455 460

Phe Ile Ser Leu Ser Lys Ala Met Thr Ile Gly Gly Ala Phe Phe Leu  
465 470 475 480

Phe Ala Gly Ile Ala Ser Phe Ala Trp Val Phe Phe Phe Ala Tyr Leu  
485 490 495

Pro Glu Thr Arg Gly Arg Thr Leu Glu Asp Met Ser Ser Leu Phe Gly  
500 505 510

Asn Thr Ala Thr His Lys Gln Gly Ala Ala Glu Ala Asp Asp Ala  
515 520 525

Gly Glu Lys Lys Val Glu Met Ala Ala Thr Asn  
530 535

<210> 27  
<211> 1872  
<212> DNA  
<213> Triticum aestivum

<400> 27  
gcacgagctc atcactaggc tgctcagtcgt tctgtttcaac gaacgatcag ttcgttcctaa 60  
gcagatgaaa atgtctccgg aaagaaaagg agcggaggac aaggaagaag gatcgaggat 120  
ggcttctgct ggcgtcccgg agccgggggc agtccatcca aggaacaagg gcaatttcaa 180

```

gtacgccttc acctgcgcgc tctgtgcttc catggccacc atcgtcctcg gctacgaagt 240
tggtgtgatg agcgggtgct cgtgttacat caagagggac ctgcagatca cggacgtgca 260
gctggagatc atgatgggca tcttgagcgt gtacgcgcct atcgggtcct tctcgggccc 280
gaggacgtcc gactgggtcg gcgcgcgcgt caccgtcgtc ttgcgggccc ccattctcaa 300
caacggctcc ttgctcatgg gcttcgcggt caactacgcc atgctcatgg tggggcgctt 320
cgtcacggga atcggcgtgg gctacgcgat catggctcgc ccagtgtaca cgcgcgaggt 340
gtcccccggg tggcccccgg gcttcttcac gtcttctacc gaggtgttca tcaatgtggg 360
cattctcttt ggctacgtct caaactacgc cttcggcggc ctcccgctcc acctcagctg 380
ggcgttcctg ctgggcctcg gcgcgcgcgc gtccgcctcg cttgcgcctc tgggtgttcg 400
catgcgcgag tctctctcgt ggctcgtcat gaaaggccgc ctgcgggarg ccaggggcgt 420
tctggccaaag acctccgaca cgcgcgagga ggccgtggag cgccttgacc agatcaaggc 440
tgccgcgcgc atccctaggg aaacttgacg cgaagtgggt gtcattgcta agacaaaaag 460
cggccagggg aagcaggtgt ggaaggagct cactctctcg ccgacccag ccattggggc 480
catactgctc ggcgcgcctg gcattcattt ctctcagcag gcgacgggct ccgactcgtt 500
cgtgctctat agcccaacgc tgttcacag agggggcctc accggcgaca accacctgct 520
cggcgcacaa tggcccatgg gggtcatgaa gacgtctctc atcctggtgg ccacgttcca 540
gtcgcacgcg gtgcgcaggg gcgcgcgtct gctgacagc accggcgcca tgcctgcctg 560
tctcatcggc ctgcggacgc gctcaccgt cgtgggtcgg caccgcgacg ccagggtccc 580
gtggggccatc ggctcgtgca tctgttccat cttggcctac gtgtccttct tctccatcgg 600
cctcggggccc ctcaccagcg tgtacacctc ggaggtcttc ccactgcggg tgcgcgcgct 620
gggtcttcgc ctgggcacgt catgcaacgc cgtcaccagc gcgcgggtct ccattgtcctt 640
cctgtccttg tccaaaggca tcaaccatcg cggcagcttc tctctgtacg ccggcatcgc 660
ggcgatagga tggattttct tcttcacctt cattccggag acggttgggc tgcgcctcga 680
ggagataggg aagcttttct gcatgacgga cagggcgtc gaagcccaag acaccgccac 700
gaaagacaag ggcgaaagtag gggagatgaa ctagtgcgct agacgtcaac caactgttac 720
cgatgtacta ccatagagat gtatctgac aacgtggcaa tataagtgtc acggactctt 740
ggtgctcatt gatggattgt ttggataaaa ttccaagaga attgtttcaa gtttggtacc 760
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 780
aaaaaaaaaa aa

```

<210> 28  
 <211> 529  
 <212> PRT  
 <213> Triticum aestivum

<400> 28  
 Met Lys Met Ser Pro Glu Arg Lys Gly Ala Glu Asp Lys Glu Gly  
 1 5 10 15  
 Ser Arg Met Ala Ser Ala Ala Leu Pro Glu Pro Gly Ala Val His Pro  
 20 25 30  
 Arg Asn Lys Gly Asn Phe Lys Tyr Ala Phe Thr Cys Ala Leu Cys Ala  
 35 40 45  
 Ser Met Ala Thr Ile Val Leu Gly Tyr Asp Val Gly Val Met Ser Gly  
 50 55 60  
 Ala Ser Leu Tyr Ile Lys Arg Asp Leu Gln Ile Thr Asp Val Gln Leu  
 65 70 75 80  
 Glu Ile Met Met Gly Ile Leu Ser Val Tyr Ala Leu Ile Gly Ser Phe  
 85 90 95  
 Leu Gly Ala Arg Thr Ser Asp Trp Val Gly Arg Arg Val Thr Val Val  
 100 105 110  
 Phe Ala Ala Ala Ile Phe Asn Asn Gly Ser Leu Leu Met Gly Phe Ala  
 115 120 125  
 Val Asn Tyr Ala Met Leu Met Val Gly Arg Phe Val Thr Gly Ile Gly  
 130 135 140  
 Val Gly Tyr Ala Ile Met Val Ala Pro Val Tyr Thr Pro Glu Val Ser  
 145 150 155 160

Pro	Ala	Ser	Ala	Arg	Gly	Phe	Leu	Thr	Ser	Phe	Thr	Glu	Val	Phe	Ile
				165					170					175	
Asn	Val	Gly	Ile	Leu	Leu	Gly	Tyr	Val	Ser	Asn	Tyr	Ala	Phe	Ala	Arg
			180					185					190		
Leu	Pro	Leu	His	Leu	Ser	Trp	Arg	Val	Met	Leu	Gly	Ile	Gly	Ala	Val
		195					200					205			
Pro	Ser	Ala	Leu	Leu	Ala	Leu	Met	Val	Phe	Gly	Met	Pro	Glu	Ser	Pro
	210					215					220				
Arg	Trp	Leu	Val	Met	Lys	Gly	Arg	Leu	Ala	Asp	Ala	Arg	Ala	Val	Leu
225					230					235					240
Ala	Lys	Thr	Ser	Asp	Thr	Pro	Glu	Glu	Ala	Val	Glu	Arg	Leu	Asp	Gln
				245					250					255	
Ile	Lys	Ala	Ala	Ala	Gly	Ile	Pro	Arg	Glu	Leu	Asp	Gly	Asp	Val	Val
			260					265					270		
Val	Met	Pro	Lys	Thr	Lys	Gly	Gly	Gln	Glu	Lys	Gln	Val	Trp	Lys	Glu
		275					280					285			
Leu	Ile	Phe	Ser	Pro	Thr	Pro	Ala	Met	Arg	Arg	Ile	Leu	Leu	Ala	Ala
	290					295					300				
Leu	Gly	Ile	His	Phe	Phe	Gln	Gln	Ala	Thr	Gly	Ser	Asp	Ser	Val	Val
305					310					315					320
Leu	Tyr	Ser	Pro	Arg	Val	Phe	Gln	Ser	Ala	Gly	Ile	Thr	Gly	Asp	Asn
				325					330					335	
His	Leu	Leu	Gly	Ala	Thr	Cys	Ala	Met	Gly	Val	Met	Lys	Thr	Leu	Phe
			340					345					350		
Ile	Leu	Val	Ala	Thr	Phe	Gln	Leu	Asp	Arg	Val	Gly	Arg	Arg	Pro	Leu
		355					360					365			
Leu	Leu	Thr	Ser	Thr	Ala	Gly	Met	Leu	Ala	Cys	Leu	Ile	Gly	Leu	Gly
	370					375					380				
Thr	Gly	Leu	Thr	Val	Val	Gly	Arg	His	Pro	Asp	Ala	Lys	Val	Pro	Trp
385					390					395					400
Ala	Ile	Gly	Leu	Cys	Ile	Val	Ser	Ile	Leu	Ala	Tyr	Val	Ser	Phe	Phe
				405					410					415	
Ser	Ile	Gly	Leu	Gly	Pro	Leu	Thr	Ser	Val	Tyr	Thr	Ser	Glu	Val	Phe
			420					425					430		
Pro	Leu	Arg	Val	Arg	Ala	Leu	Gly	Phe	Ala	Leu	Gly	Thr	Ser	Cys	Asn
		435					440					445			
Arg	Val	Thr	Ser	Ala	Ala	Val	Ser	Met	Ser	Phe	Leu	Ser	Leu	Ser	Lys
	450					455					460				
Ala	Ile	Thr	Ile	Gly	Gly	Ser	Phe	Phe	Leu	Tyr	Ala	Gly	Ile	Ala	Ala
465					470					475					480
Ile	Gly	Trp	Ile	Phe	Phe	Phe	Thr	Phe	Ile	Pro	Glu	Thr	Arg	Gly	Leu
				485					490					495	
Pro	Leu	Glu	Glu	Ile	Gly	Lys	Leu	Phe	Gly	Met	Thr	Asp	Thr	Ala	Val
			500					505					510		

Glu Ala Gln Asp Thr Ala Thr Lys Asp Lys Ala Lys Val Gly Glu Met  
 515 520 525

Asn

<210> 29  
 <211> 729  
 <212> FRT  
 <213> Arabidopsis thaliana

<400> 29  
 Met Ser Gly Ala Val Leu Val Ala Ile Ala Ala Ala Val Gly Asn Leu  
 1 5 10 15  
 Leu Gln Gly Trp Asp Asn Ala Thr Ile Ala Gly Ala Val Leu Tyr Ile  
 20 25 30  
 Lys Lys Glu Phe Asn Leu Glu Ser Asn Pro Ser Val Glu Gly Leu Ile  
 35 40 45  
 Val Ala Met Ser Leu Ile Gly Ala Thr Leu Ile Thr Thr Cys Ser Gly  
 50 55 60  
 Gly Val Ala Asp Trp Leu Gly Arg Arg Pro Met Leu Ile Leu Ser Ser  
 65 70 75 80  
 Ile Leu Tyr Phe Val Gly Ser Leu Val Met Leu Trp Ser Pro Asn Val  
 85 90 95  
 Tyr Val Leu Leu Leu Gly Arg Leu Leu Asp Gly Phe Gly Val Gly Leu  
 100 105 110  
 Val Val Thr Leu Val Pro Ile Tyr Ile Ser Glu Thr Ala Pro Pro Glu  
 115 120 125  
 Ile Arg Gly Leu Leu Asn Thr Leu Pro Gln Phe Thr Gly Ser Gly Gly  
 130 135 140  
 Met Phe Leu Ser Tyr Cys Met Val Phe Gly Met Ser Leu Met Pro Ser  
 145 150 155 160  
 Pro Ser Trp Arg Leu Met Leu Gly Val Leu Phe Ile Pro Ser Leu Val  
 165 170 175  
 Phe Phe Phe Leu Thr Val Phe Phe Leu Pro Glu Ser Pro Arg Trp Leu  
 180 185 190  
 Val Ser Lys Gly Arg Met Leu Glu Ala Lys Arg Val Leu Gln Arg Leu  
 195 200 205  
 Arg Gly Arg Glu Asp Val Ser Gly Glu Met Ala Leu Leu Val Glu Gly  
 210 215 220  
 Leu Gly Ile Gly Gly Glu Thr Thr Ile Glu Glu Tyr Ile Ile Gly Pro  
 225 230 235 240  
 Ala Asp Glu Val Thr Asp Asp His Asp Ile Ala Val Asp Lys Asp Gln  
 245 250 255  
 Ile Lys Leu Tyr Gly Ala Glu Glu Gly Leu Ser Trp Val Ala Arg Pro  
 260 265 270  
 Val Lys Gly Gly Ser Thr Met Ser Val Leu Ser Arg His Gly Ser Thr  
 275 280 285



Met	Ser	Arg	Arg	Gln	Gly	Ser	Leu	Ile	Asp	Pro	Leu	Val	Thr	Leu	Phe	290	295	300
Gly	Ser	Val	His	Glu	Lys	Met	Pro	Asp	Thr	Gly	Ser	Met	Arg	Ser	Ala	305	310	315
Leu	Phe	Pro	His	Phe	Gly	Ser	Met	Phe	Ser	Val	Gly	Gly	Asn	Gln	Pro	325	330	335
Arg	His	Glu	Asp	Trp	Asp	Glu	Glu	Asn	Leu	Val	Gly	Glu	Gly	Glu	Asp	340	345	350
Tyr	Pro	Ser	Asp	His	Gly	Asp	Asp	Ser	Glu	Asp	Asp	Leu	His	Ser	Pro	355	360	365
Leu	Ile	Ser	Arg	Gln	Thr	Thr	Ser	Met	Glu	Lys	Asp	Met	Pro	His	Thr	370	375	380
Ala	His	Gly	Thr	Leu	Ser	Thr	Phe	Arg	His	Gly	Ser	Gln	Val	Gln	Gly	385	390	395
Ala	Gln	Gly	Glu	Gly	Ala	Gly	Ser	Met	Gly	Ile	Gly	Gly	Gly	Trp	Gln	405	410	415
Val	Ala	Trp	Lys	Trp	Thr	Glu	Arg	Glu	Asp	Glu	Ser	Gly	Gln	Lys	Glu	420	425	430
Glu	Gly	Phe	Pro	Gly	Ser	Arg	Arg	Gly	Ser	Ile	Val	Ser	Leu	Pro	Gly	435	440	445
Gly	Asp	Gly	Thr	Gly	Glu	Ala	Asp	Phe	Val	Gln	Ala	Ser	Ala	Leu	Val	450	455	460
Ser	Gln	Pro	Ala	Leu	Tyr	Ser	Lys	Asp	Leu	Leu	Lys	Glu	His	Thr	Ile	465	470	475
Gly	Pro	Ala	Met	Val	His	Pro	Ser	Glu	Thr	Thr	Lys	Gly	Ser	Ile	Trp	485	490	495
His	Asp	Leu	His	Asp	Pro	Gly	Val	Lys	Arg	Ala	Leu	Val	Val	Gly	Val	500	505	510
Gly	Leu	Gln	Ile	Leu	Gln	Gln	Phe	Ser	Gly	Ile	Asn	Gly	Val	Leu	Tyr	515	520	525
Tyr	Thr	Pro	Gln	Ile	Leu	Glu	Gln	Ala	Gly	Val	Gly	Ile	Leu	Leu	Ser	530	535	540
Asn	Met	Gly	Ile	Ser	Ser	Ser	Ser	Ala	Ser	Leu	Leu	Ile	Ser	Ala	Leu	545	550	555
Thr	Thr	Phe	Val	Met	Leu	Pro	Ala	Ile	Ala	Val	Ala	Met	Arg	Leu	Met	565	570	575
Asp	Leu	Ser	Gly	Arg	Arg	Thr	Leu	Leu	Leu	Thr	Thr	Ile	Pro	Ile	Leu	580	585	590
Ile	Ala	Ser	Leu	Leu	Val	Leu	Val	Ile	Ser	Asn	Leu	Val	His	Met	Asn	595	600	605
Ser	Ile	Val	His	Ala	Val	Leu	Ser	Thr	Val	Ser	Val	Val	Leu	Tyr	Phe	610	615	620
Cys	Phe	Phe	Val	Met	Gly	Phe	Gly	Pro	Ala	Pro	Asn	Ile	Leu	Cys	Ser	625	630	635

Glu Ile Phe Pro Thr Arg Val Arg Gly Ile Cys Ile Ala Ile Cys Ala  
 645 650 655  
 Leu Thr Phe Trp Ile Cys Asp Ile Ile Val Thr Tyr Ser Leu Pro Val  
 660 665 670  
 Leu Leu Lys Ser Ile Gly Leu Ala Gly Val Phe Gly Met Tyr Ala Ile  
 675 680 685  
 Val Cys Cys Ile Ser Trp Val Phe Val Phe Ile Lys Val Pro Glu Thr  
 690 695 700  
 Lys Gly Met Pro Leu Glu Val Ile Thr Glu Phe Phe Ser Val Gly Ala  
 705 710 715 720  
 Arg Gln Ala Glu Ala Ala Lys Asn Glu  
 725

<210> 30  
 <211> 549  
 <212> PRT  
 <213> Beta vulgaris

<400> 30  
 Met Ser Glu Gly Thr Asn Lys Ala Met Ser Asp Pro Pro Pro Thr Thr  
 1 5 10 15  
 Ala Ser Lys Val Ile Ala Asp Phe Asp Pro Leu Lys Lys Pro Pro Lys  
 20 25 30  
 Arg Asn Lys Phe Ala Phe Ala Cys Ala Thr Leu Ala Ser Met Thr Ser  
 35 40 45  
 Val Leu Leu Gly Tyr Asp Ile Gly Val Met Ser Gly Ala Ile Ile Tyr  
 50 55 60  
 Leu Lys Glu Asp Trp His Ile Ser Asp Thr Gln Ile Gly Val Leu Val  
 65 70 75 80  
 Gly Ile Leu Asn Ile Tyr Cys Leu Phe Gly Ser Phe Ala Ala Gly Arg  
 85 90 95  
 Thr Ser Asp Trp Ile Gly Arg Arg Tyr Thr Ile Val Leu Ala Gly Ala  
 100 105 110  
 Ile Phe Phe Val Gly Ala Leu Leu Met Gly Phe Ala Thr Asn Tyr Ala  
 115 120 125  
 Phe Leu Met Val Gly Arg Phe Val Thr Gly Ile Gly Val Gly Tyr Ala  
 130 135 140  
 Leu Met Ile Ala Pro Val Tyr Thr Ala Glu Val Ser Pro Ala Ser Ser  
 145 150 155 160  
 Arg Gly Phe Leu Thr Ser Phe Pro Glu Val Phe Ile Asn Ala Gly Ile  
 165 170 175  
 Leu Leu Gly Tyr Ile Ser Asn Leu Ala Phe Ser Ser Leu Pro Thr His  
 180 185 190  
 Leu Ser Trp Arg Phe Met Leu Gly Ile Gly Ala Ile Pro Ser Ile Phe  
 195 200 205  
 Leu Ala Ile Gly Val Leu Ala Met Pro Glu Ser Pro Arg Trp Leu Val  
 210 215 220

Met Gln Gly Arg Leu Gly Asp Ala Lys Lys Val Leu Asn Arg Ile Ser  
 225 230 235 240  
 Asp Ser Pro Glu Glu Ala Gln Leu Arg Leu Ser Glu Ile Lys Gln Thr  
 245 250 255  
 Ala Gly Ile Pro Ala Glu Cys Asp Glu Asp Ile Tyr Lys Val Glu Lys  
 260 265 270  
 Thr Lys Ile Lys Ser Gly Asn Ala Val Trp Lys Glu Leu Phe Phe Asn  
 275 280 285  
 Pro Thr Pro Ala Val Arg Arg Ala Val Ile Ala Gly Ile Gly Ile His  
 290 295 300  
 Phe Phe Gln Gln Ala Ser Gly Ile Asp Ala Val Val Leu Tyr Ser Pro  
 305 310 315 320  
 Arg Ile Phe Gln Ser Ala Gly Ile Thr Asn Ala Arg Lys Gln Leu Leu  
 325 330 335  
 Ala Thr Val Ala Val Gly Val Val Lys Thr Leu Phe Ile Leu Val Ala  
 340 345 350  
 Thr Phe Gln Leu Asp Lys Tyr Gly Arg Arg Pro Leu Leu Leu Thr Ser  
 355 360 365  
 Val Gly Gly Met Ile Ile Ala Ile Leu Thr Leu Ala Met Ser Leu Thr  
 370 375 380  
 Val Ile Asp His Ser His His Lys Ile Thr Trp Ala Ile Ala Leu Cys  
 385 390 395 400  
 Ile Thr Met Val Cys Ala Val Val Ala Ser Phe Ser Ile Gly Leu Gly  
 405 410 415  
 Pro Ile Thr Trp Val Tyr Ser Ser Glu Val Phe Pro Leu Arg Leu Arg  
 420 425 430  
 Ala Gln Gly Thr Ser Met Gly Val Ala Val Asn Arg Val Val Ser Gly  
 435 440 445  
 Val Ile Ser Ile Phe Phe Leu Pro Leu Ser His Lys Ile Thr Thr Gly  
 450 455 460  
 Gly Ala Phe Phe Leu Phe Gly Gly Ile Ala Ile Ile Ala Trp Phe Phe  
 465 470 475 480  
 Phe Leu Thr Phe Leu Pro Glu Thr Arg Gly Arg Thr Leu Glu Asn Met  
 485 490 495  
 His Glu Leu Phe Glu Asp Phe Arg Trp Arg Glu Ser Phe Pro Gly Asn  
 500 505 510  
 Lys Ser Asn Asn Asp Glu Asn Ser Thr Arg Lys Gln Ser Asn Gly Asn  
 515 520 525  
 Asp Lys Ser Gln Val Gln Leu Gly Glu Thr Thr Thr Ser Thr Thr Val  
 530 535 540  
 Thr Asn Asp Asn His  
 545